



**2022
2023**



Academic Catalog

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Welcome from President Hamilton

Congratulations on your choice to attend one of Oregon's premier community colleges—Lane Community College. At Lane, you can earn an outstanding education, obtain high-demand job skills, improve foundational skills, boost your business, or simply enrich your life.

Like you, Lane is strong. In the face of extraordinary challenges from historic wildfires to a global pandemic, Lane has remained committed to your excellence and success.

You can achieve great things at Lane:

- Transfer to a four-year college or university
- Complete career and technical training
- Prepare for college
- Earn your GED
- Gain skills to run your small business
- Expand your mind and your life

Lane's programs have outstanding industry-based credentials to give graduates an edge in the job market. For instance, our Automotive Technology program is certified by the National Automotive Technicians Education Foundation, and our Dental Assisting and Dental Hygiene programs are accredited by the American Dental Association Commission on Dental Accreditation. Our Geographic Information Science program is endorsed by the National GeoTech Center of Excellence, and our Nursing program is approved by the Oregon State Board of Nursing. These are just a few examples of the quality offerings waiting for you. Across the college, you will find a commitment to diversity and equity in our student body, in our faculty and all of our support services, from academic advising to veterans' assistance. Our faculty and staff are highly qualified and deeply dedicated to your success. We strive to keep tuition as affordable as possible through the awarding of scholarships, state grants and federal student aid.

At Lane Community College, you can transform your life through learning, and we are here to support you every step of the way.

— Margaret Hamilton, President

About Lane Community College

Lane Community College, founded in 1964, is a comprehensive community college dedicated to transforming lives through learning. The college fulfills its promise to the community by providing access to higher education, supporting student success, and ensuring its mission, core values, programs and services reflect community values and needs.

Lane's service district represents approximately 390,000 residents. The district encompasses 5,000 square miles, which includes most of Lane County from the Pacific Ocean to the Cascade Mountains, as well as individual school districts in Benton, Linn, and Douglas Counties. Lane's 314-acre campus is located in southeast Eugene, and the college offers classes and services at a number of other locations including centers in Cottage Grove, Florence, the Eugene Airport and outreach sites in the community.

Lane employs more than 900 employees who serve over 15,000 students annually. Approximately 60% are regular credit students, 15% are College Now credit students, 16% are non-credit Continuing Education students, and 9% are non-credit skills development students.

Students come to Lane with a variety of goals, including transfer to a four-year college or university, career technical education, foundational skills development, and life-long learning. All students at Lane benefit from a broad range of options for their education and support, as the college provides comprehensive programming to meet both the community's and students' needs.

Vision

Transforming lives through learning

Mission

Lane is the community's college: we provide comprehensive, accessible, quality, learning-centered educational opportunities that promote student success

Values

Learning

- Working together to create a learning-centered environment
- Recognizing and respecting the unique needs and potential of each learner

- Fostering a culture of achievement in a caring community

Diversity

- Welcoming, valuing and promoting diversity among staff, students and our community
- Cultivating a respectful, inclusive, and accessible working and learning environment
- Working effectively in different cultural contexts to serve the educational and linguistic needs of a diverse community
- Developing capacity to understand issues of difference, power, and privilege

Innovation

- Supporting creativity, experimentation, and institutional transformation
- Responding to environmental, technological, and demographic changes
- Anticipating and responding to internal and external challenges in a timely manner
- Acting courageously, deliberately, and systematically in relation to change

Collaboration and Partnership

- Promoting meaningful participation in governance
- Encouraging and expanding partnerships with organizations and groups in our community

Integrity

- Fostering an environment of respect, fairness, honesty, and openness
- Promoting responsible stewardship of resources and public trust
- Accessibility
- Strategically growing learning opportunities
- Minimizing financial, geographical, environmental, social, linguistic, and cultural barriers to learning

Sustainability

- Integrating practices that support and improve the health of systems that sustain life
- Providing an interdisciplinary learning environment that builds understanding of sustainable ecological, social, and economic systems, concern for environmental justice, and the competence to act on such knowledge
- Equipping and encouraging all students and staff to participate actively in building a socially diverse, just, and sustainable society, while cultivating connections to local, regional, and global communities

Lane's Institutional Learning Outcomes

Lane's Institutional Learning Outcomes (ILOs) are skills and habits of mind that each Lane student should develop through their involvement in our programs and courses. Each ILO is characterized by a main definition and example outcomes language. These examples show different levels of engagement possible with the ILOs and, while not exhaustive, provide guidance as to how the ILOs can be applied to Lane's broad array of learning contexts.

Think Critically

Students explore issues, ideas, artifacts, and/or events in the process of accepting or formulating opinions or conclusions. They will be able to:

- Identify and define key issues
- Determine information need, find and cite relevant information
- Demonstrate knowledge of the context and complexity of the issue
- Integrate other relevant points of view of the issue
- Evaluate supporting information and evidence
- Construct appropriate and defensible reasoning to draw conclusions

Engage Diverse Values with Civic and Ethical Awareness

Students build and reinforce awareness of the value and impact of both their personal perspectives and those of others in diverse local and global communities. They will be able to:

- Recognize and clarify personal values and perspectives
- Evaluate diverse values and perspectives of others
- Describe the impact of diverse values and perspectives on individuals, communities, and the world
- Demonstrate knowledge of democratic values and practices
- Collaborate with others to achieve shared goals

Create Ideas and Solutions

Students use their understanding of established disciplinary knowledge in conjunction with their own experiences and perspectives to create new ideas, questions, formats, solutions, or products. They will be able to:

- Experiment with possibilities that move beyond traditional ideas or solutions
- Embrace ambiguity and risk mistakes
- Explore or resolve innovative and/or divergent ideas and directions, including contradictory ideas
- Utilize technology to adapt to and create new media
- Invent or hypothesize new variations on a theme, unique solutions or products; transform and revise solution or project to completion
- Persist when faced with difficulties, resistance, or errors; assess failures or mistakes and rework
- Reflect on successes, failures, and obstacles

Communicate Effectively

Students effectively convey and interact with information in a variety of contexts and modalities with awareness of the influence of audience and purpose. They will be able to:

- Select an effective and appropriate medium (such as face-to-face, written, broadcast, or digital) for conveying the message
- Create and express messages with clear language and nonverbal forms appropriate to the audience and cultural context
- Organize the message to adapt to cultural norms, audience, purpose, and medium
- Support assertions with contextually appropriate and accurate examples, graphics, and quantitative information
- Attend to messages, check for shared meaning, identify sources of misunderstanding, and signal comprehension or non-comprehension
- Demonstrate honesty, openness to alternative views, and respect for others' freedom to dissent

Apply Learning

Students reflect on and transfer their learning, knowledge, and skills to new contexts in order to solve problems, make connections, and/or innovate. They will be able to:

- Connect theory and practice to develop skills, deepen understanding of fields of study and broaden perspectives
- Apply skills, abilities, theories or methodologies gained in one situation to new situations to solve problems or explore issues
- Use mathematics or quantitative reasoning to solve problems
- Integrate and reflect on experiences and learning from multiple and diverse contexts

About the Catalog

The information presented here reflects the most current information about Lane's programs, courses, and services at the time of publication. Lane's catalog is published for informational purposes and every effort is made to ensure accuracy. In the event of a discrepancy between a printed copy of the catalog and the online catalog, **the online catalog will be considered the catalog of record**. However, the provisions in this catalog are not to be regarded as an irrevocable contract

between the student and the college. Lane Community College reserves the right to change any provision or requirement at any time.

Academic Calendar 2022-23

For full calendar and registration schedule, see www.lanecc.edu/programs-academics/registration-schedules/academic-calendar

	Summer	Fall	Winter	Spring
Registration begins	May 2022	May 2022	November 2022	February 2023
Term starts	June 20	September 27	January 9	April 3
Finals week (for days and times, see lanecc.edu/programs-academics/registration-schedules/final-exam-schedule)	Varies	December 5 - 9	March 20 - 24	June 12 - 16
Term ends	September 10	December 10	March 25	June 17
Commencement				June 17

Lane Online

LaneOnline offers students the opportunity to earn credits that lead to degrees by taking online and hybrid courses. For more information about online learning, please see LaneOnline in the Other Learning Opportunities section of this catalog or at www.lanecc.edu/programs-academics/online-distance-learning.

Locations

- Aviation Academy, 541-463-4195, 28715 Airport Road, Eugene, OR 97402
- Cottage Grove, 541-463-4214, 1275 S. River Road, Cottage Grove, OR 97424
- Lane Dental Clinic, 541-463-5206, 2460 Willamette Street, Eugene, OR 97401
- Florence, 541-463-4835, 3149 Oak Street, Florence, OR 97439
- Main Campus, 541-463-3000, 4000 E. 30th Ave, Eugene, OR 97405
- Mary Spilde Downtown Center, 541-463-6180, 101 W. 10th Ave., Eugene, OR 97401

Contact Lane

See the directory at directory.lanecc.edu to locate contact information for all Lane Community College departments.

Transportation

LTD Bus Passes

Lane Community College students taking a credit class and ESL, ABSE, or GED students at the main campus or the Mary Spilde Downtown Center are eligible for a Lane Transit District (LTD) bus pass when they pay the transportation fee. Students taking only online classes are not eligible for a bus pass. For information on how to obtain a bus pass and sticker, go to www.lanecc.edu/experience-lane/transportation-getting-around. For bus routes and other information, go to ltd.org or call LTD Customer Services at 541-687-5555 or 711 (TTY—Oregon Relay).

BikeLane

www.lanecc.edu/about-lane/college-initiatives/institute-sustainable-practices/bike-lane-bicycle-loan-program The BikeLane bicycle loan program provides a **free** bicycle loan for one term to all Lane students taking a credit class and ESL, ABSE, and GED students on the main campus, Mary Spilde Downtown Center or at the Aviation Academy. Participants are provided a bicycle, lock, lights, and helmet for one term to use as they wish.

Parking

Main Campus

Parking is permitted in all parking lots on the main campus. Accessible Parking spaces are available in lots A, B, C, E, L, M, and N. All persons with state-issued disability parking permits may use these spaces. Valid placards must be displayed. More information about motor vehicle regulations applicable to Lane is available on Lane's website at www.lanec.edu/copps/documents/vehicle-regulations or call 541-463-5558.

Downtown Campus

The closest parking option is The Broadway South Place garage, (900-946 Charnelton St.) Parking here is free on weekends and after 6 p.m. with hourly parking available by machine (which accepts credit cards). Enrolled students may get their parking validated for the hours they are in class when parking in the Overpark (1000 E. 10th Ave.) and Parade (35 W. 8th Ave.) garages. Parking in these lots is also free on weekends, for the first hour of parking Monday through Friday, and before 7 a.m. and after 6 p.m. Monday-Friday. For more information, call 541-463-5000.

What Lane Has to Offer

Lane Community College offers college courses, career technical training, pre-college and skill development, cooperative programs with local high schools, career and life planning, services for businesses, continuing education, and cultural activities. For information about programs and degrees offered, see Programs (A-Z). For information about courses, see the complete course listing.

- Lower-division college courses
- Career technical degrees and certificates
- Transfer degrees
- Transfer pathways
- Career preparation
- Pre-college skill development
- Cooperative education
- High school dual enrollment

Continuing Education

Contact: 541-463-6100 Lane offers a variety of non-credit courses intended for the community. Many options are available, whether you want to pursue personal enrichment, boost career skills, or enhance your career through in-person or online coursework.

Who Can Attend Lane?

Anyone 18 years or older may enroll in Lane Community College credit classes. A high school diploma is not required. Non-credit classes are generally open to those 16 years or older.

Accreditation, Certifications, Affiliations

Institutional Accreditation

Lane Community College is accredited by the Northwest Commission on Colleges and Universities (NWCCU). Accreditation of an institution of higher education by the Northwest Commission on Colleges and Universities indicates that it meets or exceeds criteria for the assessment of institutional quality evaluated through a peer-review process. An accredited college or university is one that has available the necessary resources to achieve its stated purposes through appropriate educational programs, is substantially doing so, and gives reasonable evidence that it will continue to do so in the foreseeable future. Institutional integrity is also addressed through accreditation. Accreditation by the Northwest Commission on Colleges and Universities is not partial but applies to the institution as a whole. As such, it is not a guarantee of every course or program offered or the competence of individual graduates. Rather, it provides reasonable assurance about the quality of opportunities available to students who attend the institution. Inquiries regarding Lane's accredited status by the Northwest Commission on Colleges and Universities should be directed to the administrative staff of the institution. Individuals may also contact Northwest Commission on Colleges and Universities, 8060 165th Avenue N.E., Suite 100, Redmond, WA 98052, 425-558-4224, www.nwccu.org.

Other Accreditation, Certifications, Affiliations

- **Automotive Technology**, certified by the National Automotive Technicians Education Foundation, a non-profit foundation within the National Institute for Automotive Service Excellence
- **Aviation Maintenance**, approved under Part 147 of the Federal Aviation Regulations of the Federal Aviation Administration
- **Dental Assisting**, American Dental Association's Commission on Dental Accreditation, a specialized accrediting board recognized by the U.S. Dept. of Education. The Commission may be contacted at 800-621-8099 or 312-440-4653 or 211 East Chicago Avenue, Chicago, Illinois 60611
- **Dental Hygiene**, American Dental Association's Commission on Dental Accreditation, a specialized accrediting board recognized by the U.S. Dept. of Education. The Commission may be contacted at 800-621-8099 or 312-440-4653 or 211 East Chicago Avenue, Chicago, Illinois 60611
- **Diesel Technology**, evaluated and accredited by the Association of Equipment Distributors Foundation (AEDF). Membership: Northwest Diesel Industry Council (NDC) & Oregon Trucking Association (OTA)
- **Geographic Information Science**, endorsed by the National GeoTech Center of Excellence
- **Health Information Management**, by the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM)
- **Medical Assistant**, accredited by the Commission on Accreditation of Allied Health Education Programs, a specialized accrediting board recognized by the Council for Higher Education Accreditation, on the recommendation of the Medical Assisting Education Review Board of the American Association of Medical Assistants Endowment. Commission on Accreditation of Allied Health Education Programs, 25400 US Highway 19 North, Suite 158, Clearwater, FL 33753, 727-210-2350
- **Nursing**, Oregon State Board of Nursing (OSBN) 27938 SW Upper Boones Ferry Rd, Portland, OR, 971-673-0685, oregon.gov/OSBN. Lane is a member of the Oregon Consortium for Nursing Education (OCNE) and offers a competency-based curriculum. OCNE is a partnership of Oregon nursing programs dedicated to educating future nurses. Faculty from eleven community colleges and six university campuses created – and continue to develop – a shared curriculum taught on all consortium campuses
- **Paramedicine**, nationally accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP)
- **Physical Therapist Assistant**, accredited by the Commission on Accreditation in Physical Therapy Education (CAPTE), 1111 North Fairfax Street, Alexandria, Virginia 22314, 703-706-3245
- **Practical Nursing**, accredited by the Oregon State Board of Nursing (OSBN), 17938 SW Upper Boones Ferry Rd., Portland, OR 97163-0685, oregon.gov/OSBN/Pages/index.aspx

Credit Student Outcomes

- From a cohort of full-time, first-time-in-college, degree-seeking students who enrolled at Lane fall term of 2017: by August 2020, 19% had completed a degree and 21% transferred to another higher education institution. (Source: IPEDS)

Nondiscrimination Statement

www.lanec.edu/copps/documents/nondiscrimination-statement It is a policy of the Board of Education and a priority of Lane Community College that there will be no discrimination and harassment on the grounds of race, color, sex, sexual orientation, gender identity, marital status, religion, national origin, age, or disability in any educational programs, activities or employment. Inquiries may be directed to Shane Turner Chief Human Resources Officer and interim Title IX Coordinator, 541-463-5115, or ADA/504 Compliance Officer Jane Reeder, 541-463-3133.

Get Started: Admissions and Registration

Who May Enroll in Credit Classes?

Anyone who is at least 18 years of age may enroll in Lane credit classes. A high school diploma is not required. Students planning to use financial aid to attend Lane must have a high school diploma, a GED certificate, or completed home schooling at the secondary level prior to the term the student wishes to receive aid. For more information, contact Financial Aid at 541-463-3400.

Anyone under age 18 must be a high school graduate or follow one of the procedures listed below in order to enroll in credit classes at Lane.

- Students who have not graduated and who are not enrolled in high school must have a GED certificate to enroll in credit classes at Lane, or
- Students who are under the age of 18 at the time they are applying to Lane to become a credit student need to complete the online admissions application. To finalize the admissions process, students under the age of 18 without a high school diploma must complete and submit to Enrollment Services the "Student/Parent-Guardian Consent Signature" form included in the online admission process. Students under the age of 18 attending Lane will not be considered as regularly admitted students until they reach the age of 18 or they have demonstrated that a high school diploma or GED has been earned. For admissions information, go to www.lanec.edu/community/education-community/early-college-expanded-options

Residency - More information about residency, including tuition rates and documentation requirements, is provided in the Tuition, Fees, Financial Aid section.

Students are considered in-district if they

- have maintained a permanent residence within the college district for at least 90 continuous days prior to the first day of the term. In-district includes Lane County, the Monroe Elementary District, and the Harrisburg Union High School District.

Students are considered in-state (out-of-district) if they

- have maintained a permanent residence within the state for at least 90 continuous days prior to the first day of the term.

Students who are in-district, in-state, or permanent residents of Washington, Idaho, Nevada, or California pay in-state tuition at Lane.

Please be aware that being designated as an Oregon resident at Lane Community College does not guarantee the same status with any other two-year or four-year institutions, either within or outside the state of Oregon. It is vital that you review the residency requirements at all institutions to understand their in-state residency requirements.

Admissions: Apply and Enroll

We accept all students age 18 or older and students under the age of 18 with a high school diploma or GED. Admissions are rolling throughout the year, but students can apply until Wednesday of the first week of each term. If you are a new credit student, you must complete all of the steps to enroll prior to the beginning of a term, or wait until the next term. To apply, complete the admissions process at www.lanec.edu/costs-admission/how-apply-enroll.

International Programs Admissions

Building 11, Room 235, 541-463-3434, www.lanec.edu/programs-academics/international-programs

Lane welcomes students who want to come to the USA to study on student visas in both the International English Program (ESL) & college-level programs.

Students applying to Lane need to complete the international application online (processing fee required) and submit the following documents electronically: copy of passport, transcripts from the most recent school attended, and proof of financial support. Other or original documents may be required in some cases. Go to the website to apply.

At Lane, a TOEFL score is not required for admission. All students will be tested for English proficiency upon arrival and class placement will be based on the results. Students will be placed in ESL courses or college-level credit classes based on the outcome of the placement test. Students who complete all classes in level F of the ESL program with a C or higher are eligible to take credit classes.

College major and International ESL students are admitted for fall, winter, and spring terms. International students must be at least 17 years of age to be admitted.

Students who are transferring to Lane from another college, university, or language school need to have at least a 2.0 GPA and be eligible to transfer their I-20 to be admitted to our regular program. Students with less than a 2.0 GPA, or those who have been academically disqualified from their current school, will be enrolled in the International Success Program. Success Program students will have additional requirements to ensure they get the support they need to succeed. Students who have earned more than 180 quarter credits need to identify a specific degree plan and the specific number of credits needed to graduate before they can be admitted. All students must be in status with immigration. Students with a terminated I-20 are not eligible to transfer to Lane. For more information about Lane's International ESL Program, see www.lanec.edu/programs-academics/english-second-language

Programs with Special Admission Procedures

Health Professions Programs

Many Health Professions degrees and certificates have special admission requirements. Students must be officially admitted to these programs. Contact the Health Professions Application Center for more information

hpapplicationcenter@lanec.edu

Limited Enrollment Programs

Some programs are limited enrollment, requiring that the program be declared as the major or requiring a special application for acceptance. Individual program pages provide more details.

Physical Exams and Immunizations

Some academic programs and student activities such as varsity sports have special requirements for physical exams and immunizations. Students can get specific information from the sponsoring department.

Registering for Classes

Registration

Registration begins each term using a staged process over several days according to the cumulative number of Lane credits earned through studies at Lane (transfer credits do not count). Students can easily check their registration date and see if they have any holds or restrictions preventing registration by going to ExpressLane under the myEnrollment tab and When Can I Register link. For information, visit the website at www.lanec.edu/programs-academics/registration-schedules-and-academic-calendar. For questions, email AskLane@lanec.edu

Class Schedule and Schedule Changes

View the current class schedule at www.lanec.edu/programs-academics/registration-schedules/class-schedule

Students may add full-term classes through Monday of the second week of the term. Students can withdraw from a course through the eighth week of the term using ExpressLane. Schedule changes could result in additional tuition & fees. Some classes require an instructor's consent to enroll. ExpressLane will inform students of this requirement when attempting registration.

Increasing the number of credits for a variable credit class can be processed using ExpressLane through the last week of regular classes, prior to the beginning of finals week. Additional tuition and applicable fees will be charged to the student's account, and payment policies will apply.

Deadline to Drop a Class

Students who drop a class and meet the refund deadline of Sunday at midnight of the first week of the term for classes that meet 11 weeks will be refunded all of the tuition. Tuition is not prorated. Students who withdraw after this deadline will not receive a refund. More information about the refund process is provided at www.lanec.edu/costs-admission/tuition-fees-and-payments/refund-information-when-dropping-class

Tuition, Fees, Financial Aid Non-credit Classes

For information about costs associated with non-credit classes, please contact the respective departments. Adult Basic and Secondary Ed/GED or ESL students taking classes at the main campus or at the Downtown Mary Spilde Center will be assessed the transportation fee every term.

Credit Classes

For information about tuition, fees, and expenses, visit

www.lanecc.edu/esfs/credit-fees-and-expenses

Tuition

- Oregon residents - \$132.50 per credit hour
- Non-residents of Oregon - \$307.50 per credit hour
- Non-resident online tuition - \$132.50 per credit hour
- International students (summer, fall, winter, spring)
 - 1-5 credits: \$330.00 per credit hour
 - 6-8 credits: \$2,150.00 per term
 - 9-11 credits: \$3,150.00 per term
 - 12-18 credits: \$3,750.00 per term
 - per credit for each credit above 18 credits per term \$ 330.00
- Non-credit students: \$5.00 per contact hour

Student Fees

Fees are subject to annual increase.

Books and materials - Books and materials will vary by class. Please refer to your program or course for specific information on book and material charges. Some classes at Lane use Open Educational Resources (OER). The term OER refers to a resource with an open copyright license that is available free of cost or at a low cost. To earn Lane's low-cost textbook designation, a course must use materials that total \$40 or less. For more information on classes using free or low-cost materials, visit www.lanecc.edu/oer

Class fees - listed next to each class in the class schedule

Technology fee - \$13.00 per credit

Online and hybrid course fee - \$10.00 per credit (max = \$50.00 per course)

Student Health Clinic fee - \$45.00 per term

Transportation fee

- Classes on main campus - \$27.00 per term
- Classes not held on main campus - \$5.00 per term

International student fee - \$125.00 per term

Credit by exam or credit by assessment fee - \$50.00 per review

First-time credit enrollment fee - \$30.00

Transcripts - Transcripts are available directly through the National Student Clearinghouse. Fees for transcripts ordered through the NSC will need to be paid with VISA or MasterCard.

Transcript fee - \$5.00-\$10.00 depending on delivery method

Transcript rush fee - \$5.00

Photo identification (not required to attend Lane) - \$5.00

Other Credit Student Fees

ASLCC Student Activity Fee

A mandatory ASLCC student activity fee is required of all students taking credit classes on Lane's main campus.

- Credit students taking main campus classes - \$63.57

Breakdown of student activity fee

- Student Life (clubs) - \$1.75
- Lane Student Government Association (Lane SGA) - \$10.00
- Black Student Union (BSU) - \$.95
- Oregon Student Public Interest Research Group (OSPIRG) - \$2.50
- Longhouse - \$3.00
- International Study programs - \$1.95
- Student Production Association (SPA) - \$2.40
- Childcare Subsidy - \$8.62
- Athletics and Recreational Sports - \$11.50
- TORCH student publication - \$2.70
- Gender Equity Center - \$1.90
- Learning Garden - \$3.35
- Maxwell Student Veteran Center - \$2.85
- Native American Student Association (NASA) - \$.70
- Movimiento Estudiantil Chicano de Aztlán (MeCHA) - \$.70
- Gender and Sexuality Alliance (GSA) - \$.70
- Asian and Pacific Islander Student Union (APISU) - \$.95
- Oregon Student Association (OSA) - \$3.85

- Student Legal Services - \$2.70

Differential Fees

Beginning with the 2003-04 academic year, Lane's Board of Education approved a differential pricing program to preserve some higher-cost career technical programs. Some programs include courses with differential fees. See individual program requirements for cost and fee information.

Determination of Residency

Residents of Oregon

In-district - In-district includes Lane County, Monroe Elementary District, and Harrisburg Union High School District. A student at least 18 years of age or a high school graduate who has maintained a permanent residency within the college district for no less than 90 continuous days prior to the first day of the term is classified as in-district. Residency requirements must be met prior to the date that a term begins.

To change residency to in-district or in-state, the student must initiate the change by completing an online residency form. Students must attach appropriate documentation. Residency requirements must be met prior to the date that a term begins, and residency changes must be made prior to the start of the term.

In-state (out-of-district) - A student who has maintained a permanent residency within the state for no less than 90 continuous days prior to the first day of the term is classified as in-state and pays Oregon tuition. Residency requirements must be met prior to the date that a term begins, and residency changes must be made prior to the start of the term. Students who have maintained permanent residency within the states of Washington, Idaho, Nevada, or California for at least 90 days prior to the first day of the term also pay In-State tuition at Lane. This exception in tuition does not allow for an exception in residency requirements for special or limited enrollment programs.

Please note that residency requirements are different at Oregon's public universities. Students intending to transfer should research specific residency requirements at public or private schools to which they will transfer.

Out-of-State and International

There are two other residency categories:

- Out-of-state but a citizen of the United States or registered resident alien.
- International (not a U.S. citizen or registered alien). International students do not become residents regardless of the length of residency within the district.

Special circumstances - A student may be classified as in-district or in-state if special circumstances can be documented. The following criteria are used to define special circumstances:

- A veteran and/or veteran's dependents who are entitled to in-district tuition in accordance with the Basic Choice Act (see Veterans Benefits and Certification).
- A released Oregon State prisoner is considered in-district regardless of residency prior to sentencing if a state agency is the sponsor.
- A legal dependent or spouse of a person who has moved into the college district and established a residence is considered in-district.

Residency - Student residency is determined from information provided by each applicant to the college. Residency does not change without some kind of student interaction. If a student wants to change residency, the student must initiate the change by visiting Enrollment Services. The college may require additional documentation to clarify residency status. Only applicants who can provide sufficient documentation that the 90-day residence requirement clearly has been met will be classified in-district or in-state. Once residency has been changed to in-district or in-state, it cannot be reversed. Residency changes will not take effect until the subsequent term following the change.

Please be aware that being designated as an Oregon resident at Lane Community College does not guarantee the same status with other two-year or four-year institutions, both within and outside the state of Oregon. It is vital that you review the residency requirements at all institutions to understand their in-state residency requirements.

Non-credit Continuing Education classes have no residency requirement.

Financial Aid

To apply for financial aid, students must submit a Free Application for Federal Student Aid (FAFSA) each academic year – summer through spring. The FAFSA is available at www.fafsa.gov. The FAFSA is available now for students applying for aid during the 2021-2022 academic year. The financial aid process takes approximately 6-8 weeks. Students should apply as early as possible after October 1, 2021, for the 2022-2023 academic year.

Lane offers three basic types of financial aid to eligible students: grants, work study, and loans. Typically, students are offered a combination of these financial aid awards. Loans must be repaid. Grants and work study do not have to be repaid as long as the student remains enrolled in the term they received funding. Scholarships are a separate source of free aid. To view further information regarding the financial aid process at Lane, see www.lanecc.edu/costs-admission/paying-college/financial-aid.

Paying for Classes

When you register for a class, you are agreeing to pay for the class. If you cannot attend the class, you must drop the class within the timelines listed in the class schedule or the college will charge you for it.

Pay Online

Payments can be made online by check or savings account, VISA or MasterCard. Access your account by logging into ExpressLane and click on the "myFinances" tab, then click on "Make a Payment." Contact Student Accounts at 541-463-3011 if you have questions about online payments.

Pay by Mail

Send your payment to Lane Community College, P.O. Box 50850, Eugene, OR 97405-0999. You can pay by check or money order payable to Lane Community College. Include your student ID number.

Payment from a Sponsoring Agent

If a sponsoring agency is paying some or all of your educational expenses, it is your responsibility to see that the agency has provided written authorization to Enrollment Services before you register. If the college does not receive your authorization in a timely manner, late fees will be added to your account balance. If you have questions, visit www.lanecc.edu/costs-admission/paying-college/bursar/sponsored-accounts or email SponsoredAccounts@lanecc.edu

Payment Plans

Lane offers interest-free payment plans that allow you to spread the cost of your education into affordable monthly or bi-weekly payments. More information on how to set up a payment plan can be found at www.lanecc.edu/costs-admission/paying-college/college-account-payment-plans.

Deferred Billing Terms Agreement

When you register for the first time, the college sets up a charge account to process your tuition and fees, other charges, credits, refunds, financial aid disbursements, and payments. You are responsible for paying your account in full, even if you are sponsored, expect to receive financial aid, think that a family member will pay, and/or never attend the class.

By registering, a student has automatically accepted the terms of Lane's Deferred Billing Agreement. See www.lanecc.edu/copps/documents/accounts-receivable-billing to access the Deferred Billing agreement. Furthermore, by registering for any class at Lane, students are agreeing to retrieve their 1098T form by accessing the electronic version in their accounts. The college does not mail 1098T forms.

Payments on Account

Students will be able to make payments on outstanding balances using ExpressLane. Students taking credit classes will not be mailed a billing notice until the final pink notice is mailed the month before an unpaid account goes into collection status. Credit students may use the Billing Statement link in ExpressLane to arrange to have a paper bill mailed. Non-credit students will be mailed paper statements unless they opt not to receive them. The system will accept partial or full payments using credit cards, checks, or savings accounts. Refunds will be credited to the student's Lane account, and any credits/balance due will be mailed to the student. If a student is eligible to receive a refund but has a balance owed to Lane, which could be for the past, present or next term, the refund will be applied to the outstanding debt. Lane uses a third-party pay system to allow you to assign access to a third party to make payments on your account. You may review the information and instructions on setting this up

at www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition. All transactions are handled through a secure payment system.

General Account Information

To find out how much you owe, access Current Students at www.lanecc.edu/students and click on the ExpressLane button.

Once open registration begins for the next term, you must pay all money you owe the college for the previous term before you can register for each subsequent term.

Late Fees

- The college will assess a late fee of two percent (2%) on your unpaid balance from a prior billing period.
- A billing period is the time between statements.

Notify the college if your address changes by using ExpressLane. It is your responsibility to maintain a current address, phone number, and email at all times. The college will block you from registering or making any schedule changes if we receive returned mail. At the end of each term, any account with an invalid address and a balance will be moved to a collection agency.

The college will charge you a returned item fee for checks with insufficient funds or for rejected VISA or MasterCard charges.

The college has the right, without prior notice, to stop or suspend the extension of financial credit, withhold services, apply some non-payroll monies due you as a payment on your account, and/or turn your account over to a collection agency, under the following circumstances:

- The post office returns a bill the college sends you.
- The bank refuses payment on checks you write.
- Your VISA or MasterCard payment is declined.
- Failure to pay.

Withholding services means that the college may withdraw you from your current classes, block your registration for future classes and workshops, and withhold transcripts.

Consequences of Not Paying

If you fail to pay your account, the college may take any or all of the following actions:

- Require immediate payment in full
- Drop advance registration for a future term
- Block enrollment for any future terms
- Decline to provide official transcripts
- Turn accounts over to a collection agency for non-payment after four months*
- Oregon State Tax Return offset

* Students will be mailed a final notice for accounts that are overdue before the college assigns them to a collection agency that reports them to a credit bureau. The collection agency will add additional collection fees, court and attorney costs to account.

Past-due accounts assigned to a collection agency after four months (120 days) - Accounts will be turned over to a collection agency for non-payment after four months (120 days). Students will be mailed a final demand "pink" billing statement for past-due accounts before the college assigns them to a collection agency. The collection agency will add their own fees and has the right to report past-due accounts to a credit bureau. Failure to maintain a correct address on file in your account will result in your account going to a collection agency if unpaid.

Past-due accounts must be paid to the assigned collection agency - Students are not able to make payments to Lane for past-due accounts that have been assigned to a collection agency. Students wanting to pay off outstanding debts owed to Lane cannot pay at Lane and must contact the collection agency listed with the hold message to make payment arrangements.

Students who have paid their accounts in full with the collection agency will not be able to register or have a transcript released until Lane receives the funds from the collection agency and the Lane account balance has been completely cleared. Payments from collection agencies can take eight weeks to reach Lane. No exceptions will be made to allow a student to register or receive an unofficial or official transcript until the account shows paid in full.

Refunds

Tuition

When you register for a class, you agree to pay for it. If **you officially drop** the class by the refund deadline, the college will refund your tuition. If the **college cancels a class**, we will refund your tuition in full. **It is your responsibility to drop any class that you do not plan to attend. Students must use ExpressLane to officially drop a class.** Refer to the class schedule for deadlines.

Lane has an **all or no** refund policy. Tuition is not prorated. Whether or not a student receives a refund or not is based on the length of the class and the date that the student drops the class. Students who drop after the refund deadline **will not** receive a refund or credit for dropping the class. If a refund is applicable, the amount is automatically posted as a credit to the student's Deferred Billing Terms Agreement account.

Interpreting the table below, the class duration is the number of weeks the class is scheduled to meet. "Refund Deadline" means by midnight (11:59 p.m.) on Sunday of the first week. For workshop refunds, students need to contact the sponsoring department.

Credit and Non-credit Classes Tuition Refund Table

Class duration	Prior to start of classes	Drop Monday week 2 by midnight
Classes 4 weeks or longer	ALL of the tuition will be refunded	ALL of the tuition will be refunded
Classes 2 to 3 weeks	ALL of the tuition will be refunded	NO tuition will be refunded
Workshops and classes of 1 week or less	ALL of the tuition will be refunded if dropped three working days or more before the workshop begins.	NO tuition will be refunded

It is students' responsibility to drop/withdraw from any class(es) they do not plan to attend. No refunds or adjustments of tuition and fees will be granted after stated refund deadlines.

Student Activity and Registration Fee Refunds

If the college cancels your credit class, or you withdraw from all your classes during the refund period, the college automatically refunds these fees.

How refunds are processed

- Refunds are first applied to any outstanding balance owed
- If financial aid or a sponsoring agency paid your account, refunds are credited either to you or to the funding source, as appropriate
- If you have paid your account with check or credit/debit card, refunds are issued via the same payment type
- The college applies all other refunds as a credit to your account
- The Transportation Fee is nonrefundable after the full-term refund deadline

If medical/emergency circumstances beyond your control prevent you from dropping your classes by the refund date, you may request an exception to the refund policy. You must complete the Refund Request online form available at www.lanecc.edu/collfin/student-accounts-refund-request-information. Petitions received after the eighth week of the term and/or without documentation will be denied.

If you have a documented medical or emergency reason why you dropped your class after the refund deadline, you can fill out the Refund Request online form and submit it to Student Accounts. A committee will review your request. Contact Student Accounts, 541-463-3011, 4000 E. 30th Avenue, Eugene OR 97405, for petitions about **credit classes**.

The deadline for submitting petitions requesting a Refund Request is 30 days from the end of the term. Refund requests submitted after this date will only be considered when a medical emergency prevents you from using ExpressLane to drop classes by the refund deadline. Even if your petition is approved, you may still owe fees and finance charges.

For information about exceptions to the refund policy, call Student Accounts at 541-463-3011.

Contact the following departments for refund petitions about Community Education classes.

- Continuing Education, 541-463-6100, lanecc.edu/community/education-community/continuing-education
- Cottage Grove Center, 541-463-4202, cg@lanecc.edu
- Florence Center, 541-463-4800
- Small Business Development Center, 541-463-6200, LaneSBDC@lanecc.edu
- Workforce Development, 4000 East 30th Ave., Eugene OR 97405-0640

If a student does not plan to attend a class, official withdrawal from that class is the student's responsibility.

Academic Support and Services

Academic Advising

Main Campus, Building 1, Room 103, 541-463-3800, www.lanecc.edu/get-support/academic-support/academic-advising or academicadvising@lanecc.edu
Students can access academic advisors via email; by scheduling an appointment in person or online at Connect with Advising; or by calling.

Academic advisors have in-depth knowledge of academic programs and provide help with course planning. New students should meet with an academic advisor during the first term at Lane to verify their degree and create an academic plan. Regularly checking in with an academic advisor throughout students' time at Lane helps to ensure they are on course to complete their degree and/or transfer to a university. Representatives from four-year schools in the state and region make regular visits to Lane Community College to meet with students considering transfer. Schedules of these visits are available from Academic Advising.

Academic Learning Skills

Main Campus, Building 11, Room 245, 541-463-5439, www.lanecc.edu/programs-academics/academic-departments/college-and-career-foundations/academic-learning-skills

Academic Learning Skills (ALS) offers courses to improve student success in general education, career technical, and transfer courses. Students who take courses offered by Academic Learning Skills gain confidence and the ability to be successful in college-level classes. Students will improve their reading, writing, vocabulary, critical thinking, math, and learning/study skills.

Adult Basic and Secondary Education

Main Campus, Building 11, Room 201, 541-463-5214; Downtown Campus, Room 404, 541-463-6180, www.lanecc.edu/programs-academics/academic-departments/college-and-career-foundations/adult-basic-and-secondary-education

The Adult Basic and Secondary Education (ABSE) department offers preparation for the General Education Development (GED) exam, college preparation, career pathways and workforce exploration, and workplace skills development.

Career Exploration Center

Main Campus, Building 1, Room 116, 541-463-3700, www.lanecc.edu/get-support/career-exploration-center or email CareerExplorationCenter@lanecc.edu

Our faculty and staff provide high-quality career assessment tools, career information resources, scholarship advising, and student employment opportunities to help students learn more about themselves, explore their options, clarify their direction, create a vision for their future, take steps toward their goals, and fund their college education.

- We recognize each student's unique strengths, interests, and values and their desire to create authentic, meaningful lives
- We refer students to counselors for more in-depth personal support and interventions
- We collaborate with and support student success and retention programs, such as First-Year Experience and Guided Pathways
- We connect students with campus and community resources to support their success and goal attainment

Center for Accessible Resources

Main Campus, Building 19, Room 263A, 541-463-5150, (voice); TTY Relay: 711, FAX 541-463-4739, www.lanecc.edu/get-support/resource-centers/center-accessible-resources or email accessibleresources@lanecc.edu

The Center for Accessible Resources' (CAR) mission is to provide equal access and remove barriers to various learning environments through reasonable

accommodations so that all students can be active participants in the Lane community. CAR strives to promote inclusion while fostering student independence, resilience, and self-advocacy skills.

CAR works to advocate for disability as an important element of intersectional identity and human diversity. CAR works with students and faculty to determine appropriate academic adjustments and services for students with disabilities and partners with the Lane campus community to provide education, resources, and support with an emphasis on Universal Design and inclusive environments.

CAR Support and Services include:

- Strategies for student success
- Academic support and consultation
- Campus and community support referrals
- Test accommodations
- Alternate text format for course materials
- Accessible technology
- Sign language interpreting
- Captioning and transcription
- Note-taking

Child Care

Main Campus, Child and Family Education Department, Building 24, Room 114, 541-463-5517, www.lanec.edu/get-support/daily-living-support/students-children/lane-child-and-family-center

Lane Child and Family Center, Buildings 24, 25, 26

The Lane Child and Family Center is state-licensed and nationally accredited through the National Association for the Education of Young Children (NAEYC) and rated five stars by Oregon's Quality Rating and Improvement System. The preschool/child care program is located on the main campus and provides child care for children 30 months to 5 years of age for students, staff, and community families. The center is open 7:30 a.m.-5:30 p.m., Monday-Friday during the academic year and 7:30 a.m.-5:30 p.m., Monday-Thursday the first 10 weeks of summer term. The professional teaching staff has extensive education and training in early childhood education. The center is a teacher preparation school for students in the Early Childhood Education program and a cooperative preschool where parents can volunteer in the classroom and reduce their child care fees.

Child care grant and subsidy assistance is available. Students with children enrolled in the Lane Child and Family Center may qualify to receive a CCAMPIS grant, reducing child care expenses by 75 percent. See www.lanec.edu/get-support/daily-living-support/students-children/lane-child-and-family-center/child-care-access-lane-grant-ccampis

In addition, the Lane Child and Family Center has a Preschool Promise classroom which provides free child care for children 3-4 years old.

See lanekids.org/preschool-promise-2/. For additional information and fee schedules, contact the Child and Family Education Department office or visit the website.

Quality Care Connections - Building 24, 541-463-3954, or 800-222-3290

Quality Care Connections is a community-based program that works to ensure the children of Lane students and other families have access to safe, quality, and affordable child care. Quality Care Connections provides the following services:

Students - Students who are parents can receive personalized referrals to child care options in Lane County based on specific family needs. Trained consultants search hundreds of child care listings and offer support in making appropriate child care connections. Parents receive research-based information to help assess the quality of their childcare choices.

Child care professionals - Assistance in launching a child care business, training, technical assistance, and resources are offered to people who are interested in caring for children. Training topics include first aid/CPR, business development, and child guidance. Classes are offered on evenings and weekends. Professional development scholarship opportunities are available on a limited basis.

Servicios en Español - Servicios en Español son ofrecidos y disponibles a todos, 541-463-3306.

Computer Labs

All students registered for credit classes have unlimited access to open computer labs on the Main, Downtown, Cottage Grove, and Florence campuses. The technology resource fee paid by each student provides this access. For more

information, including current hours and specific locations of open labs, go to www.lanec.edu/get-support/resource-centers/computer-labs

Concepción "Connie" Mesquita Multicultural Center

The Multicultural Center promotes community building for the success of students of color. The center provides a cultural, academic, and social framework in collaboration with college and community partners. The main focus is on social justice while addressing issues and concerns of race, culture, and ethnicity, as well as the development of culturally relevant and appropriate knowledge, skills, and abilities. The center has four programs: the African American Student Program, the Chicano/Latino Student Program, the Native American Student Program, and the Asian and Pacific Islander Student Program. A faculty member coordinates each program. www.lanec.edu/get-support/resource-centers/concepcion-connie-mesquita-multicultural-center

The services offered include:

- Assistance regarding admission, registration, FAFSA seminars, and scholarship guidance
- Advocacy, support, and resources for community building
- Lounge area with a kitchenette and computers for student use
- Extensive library on diversity issues
- Staff bilingual in Spanish

Counseling Center

Main Campus, Building 1, Room 103, 541-463-3600, www.lanec.edu/get-support/academic-support/counseling-center

Free same-day or future appointments can be made by calling or coming into our center. Most appointments are conducted remotely, through Zoom.

Retention Counselors proactively provide support that leads to student success and retention. We foster meaningful connections contributing to clearer academic and career direction, as well as increased confidence, self-advocacy, and motivation. Counselors empower students to recognize and overcome internal and external barriers in order to reach their education and career goals. Access, equity, and inclusion principles help us prioritize our efforts.

Personal, academic, and retention counseling - We provide no-cost counseling and resource referrals for students with academic or personal concerns impacting their ability to reach short-term and long-term goals.

Career counseling - Through individual counseling, we help students become clear about their academic and career goals. We assist students with clarifying their interests, strengths, values, and goals; explore majors and career fields; and develop a vision for their future and next steps.

Human development classes - Counselors are faculty members who teach Human Development classes, including College Success (CG 100), Career and Life Planning (CG 140), Human Relations at Work (CG 203), College Success: Back On Course (CG 100BC), and Improving Parent-Child Relations (CG 213). Courses are offered in varied formats; in-person, hybrid and online. CG 100 (the 3-credit course only) and CG 203 fulfill the human relations requirement for Associate of Applied Science degrees and certificates. All CG courses (1-3 credits) will fulfill electives for the Associate of Arts Oregon Transfer degree and other transfer degrees.

Lane counselors are highly trained professionals with a variety of credentials. All counselors engage in continuing education to maintain excellence and currency in services. All counselors subscribe to the Ethical Standards of the American Counseling Association, and Licensed Professional Counselors are bound by the Oregon Code of Ethics. These standards and laws protect student confidentiality and other rights. Personal information discussed with a counselor is private and confidential, unless the student gives written permission to share it with others; it involves potential danger to self or others; it involves child, elder or vulnerable adult abuse; a court orders the release of information; or other exceptions in accordance with Oregon statutes.

The main campus Counseling Center is open Monday through Friday, 8 a.m.-5 p.m., as well as summer term hours when the college is open. Contact the Florence center for information about counseling services on that campus.

Enrollment Services

Main Campus, Building 1, First Floor Lobby, 541-463-3100, 877-520-5391, www.lanec.edu/administration/enrollment-services or

email AskLane@lanecc.edu The Enrollment Services department at Lane is the place to go for information and assistance with registration, student records/transcripts, holds, grades and other enrollment-related services.

Financial Aid

Main Campus, Building 1, First Floor Lobby, 541-463-3400, www.lanecc.edu/costs-admission-paying-college/financial-aid, or email finaid@lanecc.edu Financial Aid provides assistance to new and returning students with accessing federal and state funding resources to help meet the cost of their educational goals. Staff are available by email, phone, or in person to help students understand and navigate the financial aid process. Visit the Financial Aid website for office hours and more information about the process.

First Year Experience

Main Campus, Building 1, Room 103, 541-463-5771, www.lanecc.edu/experience-lane/first-year-experience or email SuccessCoach@lanecc.edu The three pillars of Lane's First Year Experience (FYE) are academic planning, career exploration, and financial skill-building. Lane's First Year Experience (FYE) guides first-year, degree-seeking students in their transition to and engagement with Lane Community College. Through online and in-person activities, the FYE exposes students to a variety of opportunities to help students make sound decisions in career, academic, and financial arenas. Success coaches and peer mentors provide a welcoming, accessible environment (both in-person and online), where students can identify and overcome obstacles that could impede progression and goal attainment. Participation in Lane's FYE is open to all new students and is a requirement for recipients of the Oregon Promise grant.

Gender Equity Center

Main Campus, Building 1, Room 202, 541-463-5353, www.lanecc.edu/get-support/resource-centers/gender-equity-center or email GenderEquityCenter@lanecc.edu The Gender Equity Center is a respectful, inclusive, and supportive environment for people of all gender identities to explore, celebrate, and educate the campus community about gender equity. Equality assumes that life is a level playing field where everyone gets the same things in order to thrive. The reality is that we all start from different places. Equity means giving people what they need to thrive. The Gender Equity Center provides resources for students, staff and faculty, including educational resources, programs, events and peer mentorship through the Peer Gender Ambassador Program. The center is committed to being a learning place where all levels of understanding are welcome and respectful dialogue is encouraged. The center provides space for student groups to meet and gather to build community across the gender spectrum.

Areas of focus include:

- Resources, advocacy, and support for women, including the Women in Transition (WIT) Learning Community
- LGBTQ+ support, advocacy, resources, and community building
- Healthy masculine identities
- Domestic and sexual violence prevention and support

Health Clinic

Main Campus, Building 18, Room 101, 541-463-5665, www.lanecc.edu/get-support/health-wellness/health-clinic **Health Clinic staff** includes family nurse practitioners, a registered nurse, medical assistants, front office staff, a clinic director, an administrative assistant, and students in Health Professions programs.

Services - The Health Clinic provides convenient health care services to eligible Lane students. Our mission is to provide affordable, efficient, evidence-based health care to the students of Lane Community College. The Health Clinic staff provides quality care in a collaborative partnership with the patient, with respect for diverse beliefs and needs, assisting the patient to make informed decisions about their health. The clinic provides education to patients to enable them to be better consumers of health care and stewards of their own health.

Appointments can be made by calling the Health Clinic. Office visits are free of charge to all eligible students. We offer some additional services at low cost, including immunizations, in-house labs, program, and sports physicals. We provide lab services and utilize Quest Diagnostics to process specimens. Available services include, but are not limited to:

Diagnosis and treatment of:

- Minor acute conditions such as sore throat, rash, ankle sprain
- Sexual health

- STI testing and treatment
- Student program physicals
- Sports physicals
- Immunizations/titers
- Tobacco cessation
- Resources and referrals to specialty providers

Confidentiality -All services provided are confidential. A confidential electronic medical record is established for each patient and is protected by federal and state laws governing the release of these records. The electronic records are stored on a network and servers that are not a part of the Lane Community College IT network. The records are only accessible by Health Clinic staff and not by any other department on campus (subject to federal and state statutes).

Payment methods - The Health Clinic bills Trillium, PacificSource Community Solutions, and DMAP for services covered by the Oregon Health Plan. Payments for our fee-based services are due at the time of service (cash, check, or to an open Lane account). Lab costs will bill directly to your insurance or directly to you by Quest Diagnostics if you do not have insurance coverage.

Clinic hours - Fall, winter, and spring terms the clinic is open on all days that classes are in session, with appointments available Mondays - Thursdays; summer term hours may vary and the campus, including the Health Clinic, is closed on Fridays during the summer. We are closed Saturday, Sunday, holidays, and any other time the campus is closed. There may be unscheduled closings due to inclement weather or other unforeseen circumstances. If you have a medical emergency while on campus, please call Public Safety at 541-463-5555. If you are not on campus, dial 911 or report to a local emergency department.

Housing

Titan Court is a 6-story apartment community located in downtown Eugene, Oregon. The apartments are leased individually by the bedroom and come fully furnished. Titan Court is within walking distance to many downtown attractions and services. Titan Court offers a Students First™ program with resident events to encourage social interaction and academic success. For more information, visit www.titancourt.com or call 541-234-8193.

Other options may be available for Lane students.

See www.lanecc.edu/experience-lane/housing for more information.

International Programs

Main Campus, Building 11, Room 235; 541-463-3434; www.lanecc.edu/programs-academics/international-programs

International Programs serve international students coming to the United States, students seeking global degrees and study abroad, and global learning for all students. More than 400 international students from over 40 countries attend Lane Community College. Students who are in the United States on an F-1 student visa can study in either the ESL program or in credit classes. International Programs helps students create positive and successful educational experiences that include orientation to the college and community, immigration advising, academic advising, transfer planning, assistance with housing, and recreational activities. Opportunities are available throughout the school for both international and American students, including on-campus activities and enrichment trips to local, regional and statewide places of interest. Students from all over the world join together and share their cultures in activities such as Coffee Talk social hours, holiday celebrations and an annual International Day. Activities focus on making friends and learning about each other and other cultures.

International Programs supports students in maintaining their F-1 status and with SEVIS rules. SEVIS requirements mandate that international students successfully complete 12 credits/18 hours per term with a 2.0 GPA. Support is provided to international students with difficulty meeting this requirement through the International Success Program, which includes tutoring, required classes, and extra advising. This is offered to help students meet their academic goals and stay in status with immigration rules and regulations. Students who do not meet these requirements have their SEVIS status terminated and must return home or transfer. For information about the SEVIS rules see www.lanecc.edu/programs-academics/international-programs/immigration-policies.

Global degree completion and study abroad are offered across a variety of majors and locations with options expanding to meet student needs. Please visit www.lanecc.edu/experience-lane/study-abroad

Library

Main Campus, Center Building, 2nd Floor, 541-463-5273, library.lanec.edu
The Library provides resources for the instructional, research, recreational, and general information needs of students, faculty, staff and community residents. The collection includes over 60,000 books and audiovisual materials, over 200,000 e-books, subscriptions to print periodicals, and a wide variety of databases offering online access to over 90,000 periodicals. Remote access to the Library's catalog and full-text online databases is available to Lane students and staff.

Instruction and services - Librarians provide information assistance to individual students, faculty and staff; offer classes in library research skills; present orientations to classes; assist with the preparation of research assignments; prepare specialized bibliographies; design course-specific web pages; and work with faculty to develop the Library's collection and provide curriculum support. Lane students can borrow materials from libraries in the Pacific Northwest and beyond. The library also provides computers and equipment, group study rooms, video viewing, a library classroom, and assistive technology.

Hours: The Library is open Monday through Friday from 8:00 a.m. - 5:00 p.m. The Library is closed Saturday and Sunday.

Open Educational Resources (OER) - Some classes at Lane use Open Educational Resources (OER). OER takes the place of more expensive textbooks, reducing the overall cost of taking the class. For more information on classes using free and low-cost materials, visit www.lanec.edu/oer or email oor@lanec.edu

Longhouse

Main Campus, Building 31, 541-463-3660, www.lanec.edu/community/resources-community/longhouse or email longhouse@lanec.edu The Lane Community College Longhouse is a multi-use facility available to all students and provides program and classroom space for culturally appropriate activities. Lane Community College was the first in the State of Oregon to open the doors of a Longhouse on a community college campus. Situated in Kalapuya territory, the Longhouse is a sovereign space where Native American students and the community can share their values and cultures to create mutual learning relationships. The Longhouse continues its mission to provide a culturally sustainable home and place of learning. The elegant building is a container of rich and diverse Native American cultures.

Maxwell Student Veterans Center

Main Campus, Building 1, Room 201, 541-463-5684 www.lanec.edu/get-support/resource-centers/maxwell-student-veteran-center The Maxwell Student Veteran Center (MSVC) is dedicated to the success and academic achievement of Lane Community College's student and staff veterans and family members. The MSVC provides a space where students can study and socialize among fellow service members. By connecting students to resources and services, both on campus and in the community, the MSVC offers support for the wide range of challenges faced by our student veteran population.

Mental Health and Wellness Center

Main Campus (Building 18), 541-463-5930, email MHWC@lanec.edu or see the website at www.lanec.edu/get-support/health-wellness/mental-health-and-wellness-center

Hours of Operation - Monday-Friday, 9:00 AM to 4:00 PM. The MHWC does not provide after-hours care. If you are experiencing a mental health emergency, please call 911 or campus public safety at 541-463-5555.

Services - The Mental Health and Wellness Center (MHWC) provides a wide range of wellness services and resources for Lane students. At the MHWC we provide mental health clinical services and referrals to currently enrolled students at no cost. The goal of the MHWC is to provide early intervention assistance to students and offer on-campus services and referrals. Available services include but are not limited to:

- Clinical mental health counseling
- Mental health support groups
- Referrals to community resources as necessary
- Educational programming for students and faculty/staff
- Virtual mental health supports
- Individual and group addiction services and supports. *Visit the section on addiction services for more information*

- Title IX (Sexual Assault); *visit the section on Title IX for more information*

Appointments can be made by calling or emailing the MHWC via the contact information above. All information will remain confidential and will not be shared with anyone except when legally or ethically required.

Addiction Program

Lane supports programs for the prevention of addiction by Lane students and employees, as well as assistance programs for those with problems related to abuse/addiction. We strive to educate the campus community about responsible substance use and addiction. The Addiction Program is housed within the Mental Health and Wellness Center (MHWC). To connect with resources, please email mhwc@lanec.edu or call 541-463-5920 or visit the website at www.lanec.edu/get-support/health-wellness/mental-health-and-wellness-center/addiction-program.

Please see the following COPPS policies for further information:

- Lane Community College Substance Abuse Statements
- Lane Community College Statement of Prevention of Alcohol Abuse & Drug use on Campus and in the Workplace – Student Statement
- Lane Community College Statement of Prevention of Alcohol Abuse and Drug Use on Campus and in the Workplace – Staff Statement

Title IX and Sexual Respect

Lane Community College does not tolerate sex or gender discrimination, including sexual misconduct such as sexual harassment and sexual assault, stalking, and intimate partner violence. These behaviors are harmful to the well-being of our community members, the learning/working environment, and collegial relationships among our students, faculty, and staff and are prohibited under federal and state Title IX Law. The college has a variety of resources available to students regarding this area. Please visit www.lanec.edu/get-support/health-wellness/sexual-respect-lane email titleix@lanec.edu or call 541-463-5920 for more information. Please see the following COPPS policy for more information: Sexual Respect – Sexual Misconduct

Performing Arts

Main Campus, Building 6, Room 204, 541-463-5419, www.lanec.edu/programs-academics/academic-departments/arts-and-humanities-division/performing-arts-department

Music - Music students at Lane have many opportunities to perform publicly. Lane currently provides a chamber choir, concert choir, symphonic band, jazz ensemble, and jazz combos and has also staffed a chamber orchestra in the past. These groups perform regularly at the end of the term and on special occasions, including tours. Student musicians are also encouraged to perform as soloists or in chamber groups in showcases held each term on the main stage. Some of Lane's large ensembles are open to all students without audition, while others require an audition. Lane offers a comprehensive two-year transfer curriculum designed for music majors; a vibrant music technology program that offers an AAS degree in Music Technology and Sound Engineering; and a variety of general music courses accessible to beginners. Individual lessons are available for voice and instruments for students at various levels. Regardless of their level of experience, students can share the joy of making music at Lane.

Dance - Dance students have a variety of performance opportunities throughout the year, ranging from informal outdoor performances to formal concerts in the Ragazzino Performance Hall. Open Show is an informal, supportive and fun performance at the end of each term where dancers of all levels hone their technical and performance skills. Intermediate and advanced dancers audition for the Lane Dance Company to work with faculty and guest choreographers on original and repertory work for the faculty concert. The Works showcases choreography by students in a formal theatrical setting. Students move from choreography studies in the studio to production, work on the stage, learning lighting, costuming, and performance skills. Lane's dance program is designed for dance majors to transfer to 4-year programs. It is a two-year curriculum based in technique, somatics, creativity and performance that develops the dancer physically, intellectually and emotionally.

Theatre - Theatre productions are the logical outcome of classwork, and Lane strongly encourages its theatre arts students to audition for shows. Public performance is the ultimate test of skill and courage. Lane's Theatre Arts program produces several shows a year. Casting policy puts students first and often includes guest artists and performers from the greater Lane community and beyond. Lane has earned a reputation for producing some of the best shows in the area.

The Student Production Association (SPA) is the producing arm of the Theatre program, offering students the opportunity to participate in all aspects of producing a full season of productions. Each year we regularly produce student-written plays as well as an independent film. Lane faculty maintain strong relations with other producing groups in the community, often recommending students upon the request of that organization and providing students an opportunity to receive credit for their work. Talent grants and scholarships are available. For more information, call 541-463-5648.

Sports and Fitness

Fitness Center, Main Campus, Building 5, Room 101, 541-463-3987, www.lanecc.edu/experience-lane/athletics-fitness/fitness-education-center

The Fitness Education Center provides state-of-the-art exercise equipment and educational instruction in health and fitness. Staff and students gain access to the center during open hours by registering for PE 113 - Fitness Education:

Introduction. Students and staff may continue to take the course by registering for PE 114 - Fitness Education: Returning. Students satisfy course requirements by attending exercise sessions during usage hours. The facility is also available by registering for a fee-based non-credit CRN. The environment is supportive and educational, encouraging people of all fitness levels and abilities. In addition, a professionally trained and dedicated staff is always available for personal guidance.

Recreational Sports Program, Main Campus, Building 5, Room 204, 541-463-5293, reamt@lanecc.edu, a current valid student ID or other proof of current term enrollment is required for participation/purchase.

The Recreational Sports program offers a selection of services at discounted rates for eligible students. These include: community sports, family activities, trips and outings, on-campus drop-in opportunities, and discounted admissions to local attractions/activities. Eligible Lane students may participate in local athletic leagues at discounted rates. The one-day and weekend events offer an opportunity for social growth and recreational participation in a safe and fun environment. By design, the program is intended to create a climate where everyone is welcome. Participation in the program is voluntary and determined by interest. Please visit the Recreation Office in the Building 5 foyer area for current term offerings. All recreational sports activities are governed by regulations provided in the Recreational Sports Handbook and supervised by the Recreational Sports office.

Intercollegiate Athletics, Main Campus, Building 5, Room 205, 541-463-5599, www.lanetitans.com

The Athletics Department is housed within Student Affairs. Lane Community College sponsors intercollegiate athletics that encourage an emphasis on academics, personal development, personal enrichment, community support, career development, and athletic excellence. The intercollegiate athletic program offers students opportunities to compete in ten varsity sports: Men's and Women's Basketball, Men's and Women's Cross Country, Men's and Women's Track and Field, Men's Baseball, Men's and Women's Soccer, and Women's Volleyball. Teams participate with 36 other schools in the Northwest Athletic Conference (NWAC), which includes colleges in Idaho, Oregon, Washington, and Canada. The NWAC governs the conference, which is divided into four main regions (north, east, south, and west). Lane competes in the southern region. Qualifiers from each region compete annually for conference championship titles.

Student Engagement

Main Campus, Center Building, Room 201, www.lanecc.edu/experience-lane Student Life and Leadership Development, through partnerships with academic and student affairs departments on campus, promotes holistic learning and assists students with connecting to college resources and programs including student activities, student organization development, leadership programming, and community service. Student Life and Leadership Development seeks to create an environment of diversity, multicultural education, and cultural competency.

Lane Student Government Association (Lane SGA)

Main Campus, Center Building, Room 201, www.lanecc.edu/experience-lane/lane-student-government-association The Associated Students of Lane Community College (ASLCC) is the student body at the Lane Community College Main Campus. The Lane Student Government Association (Lane SGA) is an organization of elected and appointed students who represent the student body. Yearly, elections are held to choose who will represent ASLCC members in student government. The elected positions in student government are the President, Vice President, and eight Senators. All credit students at the main

campus who are currently enrolled and have paid the mandatory student activity fee are members of the ASLCC.

Student Life Resources

- **Rainy Day Food Pantry**, Center Building, Room 153, is a supplemental pantry providing students with nutritious food in partnership with FOOD for Lane County. www.lanecc.edu/get-support/daily-living-support/rainy-day-food-pantry
- **Snack Shack**, Building 1, Second Floor, is a convenience store offering snacks and beverages.
- **The Clothing Stash**, Center Building, Room 153, is a thrift store where students can shop for clothing and personal hygiene products at no cost. lanecc.edu/get-support/daily-living-support/clothing-stash

Council of Clubs

Main Campus, Center Building, Room 201, www.lanecc.edu/experience-lane/clubs-organizations/council-clubs

The Council of Clubs is a representative body of active and ratified clubs on campus. The purpose of the Council is to plan club activities on campus, provide support for clubs, and encourage an active club presence on campus. For more information on currently active clubs, go to www.lanecc.campuslabs.com/engage

Asian & Pacific Islander Student Union

Main Campus, Building 1, Room 210, 541-463-3245, www.lanecc.edu/experience-lane/clubs-organizations/asian-pacific-islander-student-union-apisu The Asian & Pacific Islander Student Union (APISU) mission is to offer a space for Asian and Pacific Islander students to meet and network in order to educate, promote, and encourage awareness of Asian Pacific Islander cultures and traditions at LCC and within our community locally, nationally, and internationally.

Black Student Union

Main Campus, Building 1, Room 210, 541-463-5340, www.lanecc.edu/experience-lane/clubs-organizations/black-student-union The Black Student Union (BSU) is a student-based organization focused on the cultural, social and academic needs of African-American students attending Lane. It seeks to build cultural and community bridges in the general context of the academic environment. The BSU is open to all students, regardless of race, creed, color, religious affiliation, or sexual orientation. Membership requires a commitment to the BSU mission. BSU is committed to the development of cross-cultural ties with all groups on campus and in the community at large.

Movimiento Estudiantil Chicano de Azatlan (MEChA)

Main Campus, Building 1, Room 210, 541-463-5144, www.lanecc.edu/experience-lane/clubs-organizations/mecha Movimiento Estudiantil Chicano de Aztlán (MEChA) is a student organization that promotes higher education, cultura, and historia. MEChA was founded on the principles of self-determination for the liberation of our people. We believe that political involvement and education is the avenue for change in our society.

Native American Student Association

Main Campus, Building 1, Room 210 & Longhouse, 541-463-5238, www.lanecc.edu/experience-lane/clubs-organizations/native-american-student-association The Native American Student Association (NASA) of Lane Community College assists American Indian, Alaskan Natives, and Indigenous peoples in maintaining cultural values while pursuing their educational goals. NASA emphasizes the support, safety, and educational success of the Native Americans and other ethnicities of Lane Community College. NASA is also involved in the recruitment of Native American high school students and the retention of college students as they pursue their post-secondary education.

Gender & Sexuality Alliance

Main Campus, Building 1, Room 202H, 541-463-3253, www.lanecc.edu/experience-lane/clubs-organizations/gender-sexuality-alliance The Gender & Sexuality Alliance is a student-run organization dedicated to providing a safe and nurturing environment for LGBTQIA+ people and their straight allies to come together and express themselves while working toward bettering their community and combating intersectional oppression faced by members of the LGBTQIA+ community.

Phi Theta Kappa Honor Society

541-463-5142, www.lanecc.edu/experience-lane/clubs-organizations/phi-theta-kappa-sigma-zeta-chapter Phi Theta Kappa is the international honors society for students enrolled in two-year colleges. It originated in 1918 in Mississippi and has more than 1,000 chapters that honor students' academic achievement in every discipline. The Sigma Zeta Chapter began at Lane in 1968 and is one of the oldest chapters in Oregon. To join, students must currently be enrolled in a degree, certificate, or transfer program; have completed 12 full-time or 18 part time credits,

and have a GPA of 3.25 or better. There are one-time dues that are payable in several options.

Student Help Desk (SHeD)

Main Campus, Center Building, 2nd Floor, 541-463-3333, www.lanecce.edu/get-support/resource-centers/shed-student-help-desk; live online chat and online knowledge base at help.lanecce.edu or email shed@lanecce.edu. Knowledgeable staff are ready to provide immediate assistance to students with Moodle, ExpressLane, wireless access and other academic technologies. Call, email, drop by, or use the online chat tool in the Lane Support Hub Moodle class that all credit students are enrolled in. The SHeD is open Monday-Friday, during Fall, Winter and Spring terms, closed Fridays during Summer term. Please see our website for current in person and Zoom hours. Self-help articles for students have answers to many commonly asked questions and are available anytime.

Student Email

Lane Community College has established email as an official means of communication with students. Your student email account is used by the college to communicate important information such as course changes, information about your program of study, and notifications about academic recognition. You can also use the account for personal correspondence. Students can get help with their email accounts at the Student Help Desk (SHeD) at 541-463-3333, email shed@lanecce.edu or visit the Student Help Desk in the library.

Student Legal Services

Access the Law, 1245 Pearl Street, Suite 1, Eugene, 541-686-4890. ASLCC Legal Services is a student benefit funded by the Student Activity Fee. Legal aid and advice are available to all students who take credit classes on Lane's main campus. For more information, visit www.lanecce.edu/get-support/daily-living-support/student-legal-services.

Student Survivor Legal Services

Student Survivor Legal Services provides free legal services to Lane Community College student victims and survivors of sexual assault, dating violence, domestic violence, or stalking. This service is provided by the University of Oregon. For more information, please visit <https://ssls.uoregon.edu> or call 541-346-8555.

Student Publications

DENALI Literary Arts Magazine, Center Building, Room 008, www.denali.lanecce.edu

DENALI is a publication of Lane Community College. We publish annually in Spring term. Denali accepts original submissions from Lane students, faculty and alumni. The Denali encourages artists of all types to submit their works. These can include, but are not limited to: paintings, photographs, short stories, poetry, prose, fine art, graphic art, jewelry, ceramics, and clothing. Students wishing to submit copy or art, or become involved in any aspect of producing the magazine may contact the Denali editor at denali@lanecce.edu or Charlie Deitz, Student Publications advisor, at deitzce@lanecce.edu

Torch, Center Building, Room 008, 541-463-5654, <https://lcctorch.com>. The Torch is an award-winning, student-produced, weekly campus newspaper. Published by the Lane Community College Board of Education through the LCC Media Commission, it is an autonomous newspaper free from censorship by the college administration, faculty, and student government. Students interested in joining the Torch staff may contact the Torch editor at editor@lcctorch.com, 541-463-5655, or Charlie Deitz, Student Publications advisor, at deitzce@lanecce.edu

Sustainability

Lane offers a variety of degrees and courses that include sustainability concepts and practices. For more information, see the Sustainability website at www.lanecce.edu/about-lane/college-initiatives/institute-sustainable-practices. For a list of courses identified as having sustainability as a central focus, see Sustainability-Focused Courses

Lane is committed to:

- Integrating practices that support and improve the health of systems that sustain life.
- Providing an interdisciplinary learning environment that builds understanding of sustainable ecological, social, and economic systems, concern for environmental justice, and the competence to act on such knowledge.

- Equipping and encouraging all students and staff to participate actively in building a socially diverse, just, and sustainable society, while cultivating connections to local, regional, and global communities.

Student clubs

- Green Science Club - Science Department or faculty advisor John Thompson, 541-463-5199 or thompsonj@lanecce.edu
- Learning Garden Club - Learning Garden Specialist, 541-463-5899 or learninggarden@lanecce.edu
- Oregon Student Public Interest Research Group - 541-463-5166 or ospirg@lanecce.edu

Testing Office

Testing Support Services Main Campus, Building 19, Room 263-A and Center Building 311, 541.463.5324, www.lanecce.edu/get-support/academic-support/testing-support-services or email testingoffice@lanecce.edu. Lane Community College Testing Support Services is committed to providing professional testing services to the school and community. LCC's Testing Support Services follows the National College Test Association (NCTA) Professional Standards and Guidelines.

Support and services include:

- Assisting students in finding their math and writing starting point; currently offering multiple methods of placement for Writing and Math, and providing a single placement test for Spanish and French
- GED testing through Pearson VUE (for GED scheduling, go to www.GED.com)
- Professional and certification testing through Pearson VUE, CLEP, Scantron, and others
- Assisting with students' accessible testing needs through LCC's Center for Accessible Resources
- Providing approved make-up exams to enrolled LCC students

Titan Store

Main Campus, Center Building, 1st floor. The Titan Store carries course materials, textbooks, e-books, textbook rentals, general books, art supplies, computer hardware and software, and a variety of snacks and drinks, as well as a variety of fresh grab-and-go lunch options. Students may also purchase clothing, gifts and school supplies.

Current store hours, contact information, and course material information is available on the Titan Store's website: www.bkstr.com/laneccestore/home

TRiO Programs

TRiO, Main Campus, Building 1, Room 219, 541-463-3131, www.lanecce.edu/get-support/resource-centers/trio-and-trio-stem-center

TRiO STEM (Science/Technology/Engineering/Math), Main Campus, Building 1, Room 218, 541-463-3138

The program is federally funded with the goal of helping students stay in school and successfully graduate from Lane Community College and/or transfer to a four-year institution. The services are provided free to eligible students to assist them in meeting the varied challenges of college life. Lane hosts two TRiO Programs: TRiO Student Support Services, which serves any eligible non-STEM students, and TRiO STEM, which works with eligible STEM degree-seeking students. Both programs offer the same services to all students. The TRiO Learning Center at Lane Community College helps students succeed through academic advising, tutoring, and skill development workshops.

One or more of the following eligibility criteria must be met to apply for TRiO or TRiO STEM:

- First-generation student (neither parent received a four-year degree)
- Low income as determined by the federal government income guidelines
- Have a documented disability that interferes with education and are registered with the Center for Accessible Resources at Lane

Eligible students must also:

- Be enrolled at Lane Community College
- Pursuing a degree or certificate with the intent to complete it at Lane
- Have a need for academic support
- U.S. citizen or registered permanent resident

Tutoring Services

www.lanec.edu/get-support/academic-support/academic-and-tutoring-services
Academic and Tutoring Services coordinates free in-person and online academic tutoring in many subject areas. Tutors work one-on-one with students to build course content understanding, review materials, and establish strategic learning behaviors and habits. All services are free to currently enrolled Lane students in credit, ABSE, and ESL courses. ATS provides:

- One-on-one drop-in and scheduled sessions with experienced student and staff tutors
- Group-oriented and course-informed support
- Academic coaches who can provide tutoring in specific subjects and connect students with campus and community resources

To find more information (including current hours and locations) about Lane's full range of options and academic support, visit the tutoring website.

Veterans Benefits and Certification

Building 1, Room 201, 541-463-5663, www.lanec.edu/costs-admission-paying-college/veterans-education-certification-information or email VAEdBenefits@lanec.edu

Programs at Lane Community College are approved by the Oregon Department of Veterans Affairs as a qualified training institution for students eligible for VA education benefits. Applications for VA educational benefits and enrollment certifications are processed through the VA Regional Office in Muskogee, OK; 1-888-442-4551 or <https://benefits.va.gov/gibill>

Eligibility rules - VA education benefits are complex and students may have choices to make to determine which benefit chapter they wish to utilize. Those who qualify for benefits need to submit an application to the VA at <https://www.va.gov/education/how-to-apply> to obtain their certificate of eligibility. Students may qualify for more than one VA benefit chapter but can only be certified for one at a time. For more information, contact the LCC veterans' office at VAEdBenefits@lanec.edu

Credit load/payment - For payment purposes during a standard term, 12 credits is considered full-time. A credit load less than 12 credits is prorated at the rate determined by the VA benefit chapter the student is receiving. For non-standard terms (summer) or courses that do not follow the standard term length, the actual dates of the course are reported to the VA.

Program of Study - Students using VA education benefits must be enrolled in an approved degree or certificate program and only courses applicable toward the program can be certified for VA payment.

Academic Progress Standards - Academic Progress Standards are listed in this catalog and are provided to new students upon the initial establishment of their VA file at LCC. Students are required to demonstrate satisfactory academic progress each term they use VA benefits. Federal law requires benefits to be terminated if a student does not demonstrate satisfactory progress. If a student does not meet academic standards, an alert will be recorded on their LCC account. If a student receives more than 2 alerts, the VA will be notified of unsatisfactory progress and their benefits at LCC will be suspended. A student will need to complete a term successfully without VA benefits and complete all academic alert requirements before they can request to use these benefits again at the college.

Schedule changes, drops, and adds - Students using VA benefits must report all schedule changes made after a term planner has been submitted. Schedule changes may impact a student's VA reimbursement, particularly those occurring after the term's refund period (first week of the term). Students should communicate with the LCC Veterans Benefits Office before making schedule changes, drops, or adds to determine the possible impact on education benefits.

Important Veteran Benefit Information

Course applicability - Only courses satisfying program requirements (or prerequisites) outlined in a student's curriculum guide or graduation evaluation form can be certified to the VA. If a student takes a course that does not fulfill a program requirement, it cannot be certified to the VA. Excessive electives, for example, that are not needed to fulfill a student's program requirements, cannot be certified. Payment of tuition and fees for courses that do not meet VA applicability rules are the student's responsibility. In order for prerequisite remedial courses to be certified to the VA for program requirements in math, English, and writing, testing results from the LCC Testing Office must indicate they are necessary. Students needing remedial courses (below 100 level) must enroll in the on-campus version (not online) in order to receive VA benefits for these classes.

Repeating courses - Classes that are successfully completed may not be certified again for VA purposes if they are repeated. However, if a student fails a class, or if a program requires a higher grade than the one achieved, that course may be repeated. Payment of tuition and fees for courses that cannot be certified to the VA are the student's responsibility.

Program changes - Students utilizing VA benefits must keep their program of pursuit current on their LCC account. The program a student declares is reported to the VA every term they use benefits.

Grades - Individual grades are not reported to the VA but non-punitive (No Pass, Audit) grades are reported. Students receiving these grades at the end of the term will have an amended certification processed with the VA. This may result in a benefit adjustment as determined by the VA. Students are encouraged to complete all classes successfully to avoid possible VA debts.

Program planners - All students wanting to use VA education benefits must submit a completed term planner to the Veterans Benefits Office each term. <https://etcentral.lanec.edu/#/form/177>. To ensure course applicability and compliance with VA regulations, each term before classes are certified, the student's term planner will be compared to the requirements of the program they have declared. Only those classes required for successful program completion will be certified with the VA. Students are encouraged to communicate with Academic Advising prior to registering for any classes to ensure they are applicable and required for the program they are pursuing. Term planners should be submitted as soon as possible after registration to ensure timely processing and avoid delayed receipt of VA benefits. Changes to a previously submitted term planner will require a new planner to be submitted.

Certification - New VA students are required to complete intake forms with the LCC Veterans Benefits Office to establish their file at the college. These forms must be completed before we can process an enrollment certification to the VA. This initial establishment of your file includes providing official transcripts from all prior schools where college credit has been earned and submitting a VA certificate of eligibility.

Certification for a term occurs after the student has registered and submitted a term planner. A new term planner is required every term. Students will receive an email from the VA at the time their certification is processed. This will be sent to your lanec.edu email account. Students should review the certification email and notify the LCC Veterans Benefits Office if a discrepancy is identified. Initially, only credits are reported to the VA. Tuition and fees are reported to the VA in week 3 of the term. Students using CH 33 benefits should see the VA funds credited to their LCC account before the end of week 7 of the term.

VA payments - VA students should monitor their school's financial account on a regular basis. Failure to monitor and inquire about unpaid charges may result in late fees or the inability to register for upcoming terms.

In accordance with 38 USC 3679(e), Lane's policy is to not impose any penalty, including the assessment of late fees, the denial of access to classes, libraries, or other institutional facilities, or the requirement that a covered individual borrow additional funds because of the individual's inability to meet his or her financial obligations to the institution due to the delayed disbursement funding from the VA under Chapter 31 or 33. If this should occur, please contact the Veterans Benefits Office so that any discrepancies can be resolved.

VA and financial aid payments operate within different time periods. Students should not assume when the VA will make payments to them personally, when funds will be applied to their school account, or when financial aid refunds will be dispersed. Students receiving financial aid in conjunction with VA benefits will not receive financial aid refunds until their LCC account is paid in full. Unforeseen circumstances may occur which could delay when the VA payment is received. Students should monitor their VA account to see when payments are scheduled for deposit to their personal bank account.

Prior credits (transcripts) - Students using VA benefits at LCC who have received college credits at other schools, using VA benefits or not, must provide official transcripts from those schools before their first certification is processed to the VA. Joint Services Transcripts will be requested by LCC personnel. Air Force veterans will need to request their military transcript from the Community College of the Air Force. These transcripts ensure prior awarded credit can be reviewed and applied towards their LCC program to shorten program completion time and avoid taking unnecessary classes.

Lane email - Communication with VA students by email is done through the student's lanec.edu email account. Students should periodically view their school email to ensure they do not miss important communication related to their VA benefits.

Graduation and Transfer Requirements

A new academic year begins every summer term and ends with the following spring term. Every academic year, Lane publishes a new catalog describing the policies, academic programs, and requirements in effect during that academic year. The requirements for a program can change, and it is the student's responsibility to know and adhere to the policies and requirements in their governing catalog.

Governing Catalog

For degree purposes, a governing catalog is a set of academic programs and their requirements. Lane publishes a new catalog each academic year, which begins in the summer and runs through the end of spring term the following year. To earn an associate degree or a certificate, students must meet the requirements in the catalog that is current when they declare their program of study at Lane, unless they choose to meet the requirements of a later catalog for which they qualify. For associate degrees and two-year certificate of completion programs, a catalog's requirements are valid for five years. For certificate programs shorter than two years in length, such as Career Pathway Certificates, a catalog's requirements are valid for three years. If a course of study extends beyond the validity of the catalog program, graduation requirements may have changed and students will have to meet the requirements of a valid catalog for which they qualify. To qualify for a catalog, a student must earn at least one credit in that academic year. Students who do not earn at least one Lane credit each academic year lose the right to meet the requirements of their original catalog. They must then meet the requirements of the current catalog at the time they resume work on their degree or certificate at Lane. Reverse transfer students may graduate using their original catalog if it is no more than five years old, or any valid catalog for which they qualify using Lane or transfer coursework. If a degree program has a substantive change as defined by the Curriculum Office, then a student not in attendance during the year the change is made, but who qualifies for the immediately previous catalog, may petition to graduate under the new requirements.

Revisions to Catalog

While Lane makes every effort to ensure the accuracy of the information in this catalog, changes may be necessary. Therefore, this catalog is not a contract between Lane and current or prospective students. If the College approves changes that affect this catalog, the revised requirements will be entered into the online catalog and its accompanying catalog addendum, as well as available online in myGradPlan. In the event that a degree or certificate program is suspended or closed, the requirements for that program must be fulfilled within the timeframe of the teach-out agreement. Students affected by changes should contact the appropriate program advisor, program coordinator, or academic dean.

Degrees and Certificates

Lane may confer degrees and certificates upon satisfactory completion of prescribed credit programs. The title of the program will appear on the degree or certificate when awarded. Degrees are awarded with a graduation date commensurate with the completion of the last required course. If a degree program has a substantive change as defined by the Curriculum Office, then a student not in attendance during the year the change is affected, but who qualifies for the immediately previous catalog, may petition to graduate under the new requirements and will be awarded the degree or certificate in the first term of the new catalog year. Petitions are available on the Enrollment Services website.

Graduation Requirements

Candidates for an associate degree or certificate must meet the following general graduation requirements. Some degrees and certificates have additional limitations or requirements. Please see individual programs for requirements and limitations.

- Total credits - Complete the number of credits as required for the individual degree, including general education (foundational skills and discipline studies), core courses, and electives requirements.
- Minimum credits at Lane - Complete at least 24 credits. Career Pathways Certificates can be earned with fewer than 24 credits.
- Cooperative Education - Students may use up to 18 credits of Cooperative Education toward a degree/certificate unless otherwise specified.
- Grade Point Average - Earn a minimum cumulative GPA of 2.00 at Lane.

- Pass/No Pass - Students may select the P/NP option for up to 16 credits toward a degree/certificate unless otherwise specified in the program requirements. This does not include courses only offered P/NP.
- Credit-by-Exam and Credit-by-Assessment - Credits used toward a degree/certificate may not exceed 25% of total degree credits.
- Apply for graduation during the first week of your final term.

Exceptions for Program Requirements

Lane does not authorize individual departments to waive degree requirements of general education (foundational skills and discipline studies) requirements. An instructional dean, or designee, may use any course on a student's transcript to substitute for any required major or core course, limited up to 10 percent of the program for career-technical programs only. The Academic Requirements Review Committee will consider petitions to substitute a college general education requirement.

In accordance with the Rehabilitation Act of 1973, Section 504, colleges must be willing to modify academic requirements to prevent discrimination against eligible students with disabilities. Therefore, qualified students with disabilities may request that appropriate course substitutions be considered as a programmatic accommodation.

Graduation

Lane awards degrees and certificates to students at the end of summer, fall, winter, and spring terms. Students apply for their degrees or certificates the term they intend to complete. Application forms are submitted online through ExpressLane.

Commencement

Commencement is the annual ceremony Lane has for all graduates who complete their degrees during the year. The commencement ceremony is held in June.

There is no separate application to participate in commencement. Students who have applied for graduation and who have not completed their studies can still participate in the ceremony.

Transfer Guidelines for Degrees and Certificates

Lane uses coursework from U.S. colleges and universities that are accredited by:

- Middle States Association of Colleges and Schools, Middle States Commission on Higher Education
- New England Association of Schools and Colleges Commission on Institutions of Higher Education
- New England Association of Schools and Colleges Commission on Technical and Career Institutions
- The Higher Learning Commission
- Northwest Commission on Colleges and Universities
- Southern Association of Colleges and Schools Commission on Colleges
- Western Association of Schools and Colleges, Accrediting Commission for Community and Junior Colleges
- Western Association of Schools and Colleges, Accrediting Commission for Senior Colleges and Universities

Transfer Credit Process

Students transferring to Lane and seeking a Lane degree or certificate should submit official transcripts to Lane from post-secondary institutions previously attended. An official evaluation will be performed by a Lane degree evaluator and may only be started after Lane has received your official transcript(s). The results of an evaluation can be viewed in myGradPlan. All documents submitted to Lane become the property of Lane and are subject to federal law, as well as the Family Education Rights and Privacy Act (FERPA). Courses may transfer even if Lane does not offer an identical course. Not all transfer coursework is eligible to meet defined degree or certificate requirements. Under some circumstances, academic advisors for the program and/or major can offer an unofficial or non-Lane degree/certificate transcript evaluation. However, the official evaluation will occur upon receipt of your official transcripts.

U.S. Transfer Credits

- Grades of Pass (P) are only transferable when the issuing institution defines the grade as C- or better.

- Coursework at 300-level or higher are reviewed on a case-by-case basis.
- The college or university must have been regionally accredited or be a candidate for regional accreditation when the coursework was completed.

International Transfer Credits

Coursework listed on non-U.S. transcripts must be evaluated by an agency on the National Association of Credential Evaluation Services (NACES) website. A course-by-course evaluation is required.

Non-Traditional Transfer Credits

Credit-by Assessment and Credit-by-Exam may be granted for some courses. Students can use these methods to earn credits when institutions are not accredited by one of the approved accrediting agencies for a maximum of 25 percent of the degree or certificate. More information at www.lanec.edu Lane will evaluate any of the following learning experiences for credit depending on test and score: Advanced Placement (AP), College-level Entrance Examination Program (CLEP), and International Baccalaureate (IB). DANTES (DSST) is accepted on a highly limited, case-by-case basis through faculty assessment. Military Service Credit, (AARTS, CCAF, CGI, and SMART) is considered for transfer evaluation based on American Council on Education (ACE) recommendation. Lane does not accept non-military ACE recommendations. A military Veteran may be granted three credits of Physical Education applicable to all PE/Health degree requirements upon the submission of a DD214 with basic training completion.

Policies and Procedures

Definitions

Academic Progress Standards - A student who does not achieve satisfactory academic progress standards (APS) according to administrative regulations will be placed on academic probation. Students on academic probation will be encouraged to meet with a counselor or advisor. Students who are on academic dismissal will need to seek the help of a counselor or advisor for readmission to the college.

Academic Requirements Review Committee - The Academic Requirements Review Committee (ARRC) is commissioned to act in an advisory capacity to the Vice President for Academic and Student Affairs on the subject of academic rules and regulations for Lane Community College. Part of the responsibility of the committee is to ensure that a high academic standard is maintained. The ARRC will not accept petitions solely for the purpose of improving a Grade Point Average or other cosmetic reasons. Typically, the ARRC meets once during fall, winter, and spring terms to review student petitions. However, meetings may be held as needed throughout the year. Examples of petitions that will be considered by the ARRC include:

- substitutions to requirements for transfer or general degrees
- waiver of requirements for career technical degrees and certificates

Petitions to be reviewed by ARRC and are available online at lanec.edu/administration/enrollment-services/general-education-substitution-and-waiver-petition.

Attendance - Instructors will announce the attendance policy for each class. Students entering late who may have missed this announcement should contact the instructor for the attendance rules. Students are required to be in attendance during the first week of class. Through Lane's No Show Drop Procedure, students must attend at least one full class session during the first week of the class, and for online classes must participate in at least one meaningful class activity. Failure to comply will result in the instructor notifying the academic department to process a "No Show Drop." College instructors may allow visits to one or two class sessions at their own discretion. For more than two visits by the same individual, the written approval of the appropriate department administrator is required. Students will be held accountable for attending each class in which they have enrolled. A grade or a withdrawal notation will be assigned for each class unless the student drops the course during the refund period.

Class schedule - The quarterly class schedule is available on the web at lanec.edu/programs-academics/registration-schedules/class-schedule one week before registration begins. Registration usually begins the fourth week of the preceding term except fall term, which occurs the preceding spring term.

Commencement ceremony - There is one college commencement ceremony held each year in June. All graduates and prospective graduates for the year are

invited to attend and bring their friends and relatives. Contact Student Life and Leadership Development for ceremony details.

Since grades have not yet been recorded at the time of graduation, it is not known at that time whether students have completed their programs. Students receive one empty binder during the graduation ceremony. The actual parchments are mailed after degree/certificates have been verified, in ten to twelve weeks.

Students applying for degrees or certificates and completing their programs fall or winter terms will receive their degrees earlier in the year. There is a \$10 fee for a duplicate or additional copies of diploma parchment.

The names of students in the graduation ceremony keepsake brochures reflect those who have earned a degree or certificate summer, fall and winter terms.

Those who have been cleared to graduate spring term, pending successful completion of classes, will have their names published. Students participating in the ceremony graduating after spring term will have their names published in the next year's brochure. Students who do not attend the ceremony may pick up a binder at the Student Life and Leadership office any time after the ceremony.

Cooperative Education - Cooperative Education provides students the opportunity to learn on the job while earning college credit for the experience. Students enrolled in co-op receive help locating part-time and full-time jobs and internships, guidance about career expectations and demands, instruction in resume preparation and job interviewing skills, and financial benefit from paid positions. Unless prior approval is received from the Cooperative Education Dean, students must enroll in a minimum of three credits of co-op per term.

Core Transfer Map (CTM) - The Core Transfer Map is a group of eight classes that add up to at least 30 credits. When the full set of eight courses are successfully completed at an Oregon community college, they are guaranteed to transfer as a block to any Oregon public university, and they will count toward that university's core bachelor's degree requirements. The CTM will be noted on a student's transcript upon completion of the requirements and at the request of the student.

Course - A course is any class or subject (e.g., WR 121 - Academic Composition, BI 101 - General Biology) for which a student may register.

Course level definitions - Lane has defined course-level expectations for 100-, 200-, 300-, and 400-level courses. View these at <https://bit.ly/3zbTPP5>

Course numbers - Course numbers at Lane help students identify which courses count toward degrees and financial aid.

- **Credit courses** have a course ID that consists of a prefix of letters that identify the subject area followed by digits that identify the level of the course. In the example of WR 121, WR identifies the subject of writing and the 100-level number identifies it as a first year college-level course. All credit courses, including pre-college courses, may count toward the minimum course load for financial aid, provided the student meets financial aid criteria.
- **Honors courses** span a range of disciplines and topics. Honors courses are designated with _H following the course ID, e.g. ENG 105_H. Any Lane student can enroll in an honors course or request the honors option for courses designated as honors option classes. Admission into the Lane Honors Program, however, requires a formal application. For more information, visit lanec.edu/programs-academics/honors-program.
- **Developmental credit courses** have numbers below 100. Pre-college courses may be required as prerequisites to college-level courses or as part of a career technical certificate or applied degree. Developmental courses do not transfer to a four-year institution.
- **College-level transfer credit courses** count toward the completion of a degree or certificate and are generally accepted for transfer by other institutions.
- **Career technical credit courses** count toward Associate of Applied Science degrees or certificates. With some limits, career technical courses may count as electives for transfer degrees. Career technical courses are not automatically accepted for transfer by other institutions. See Course Types by Prefix for more information.
- **Non-credit courses** have numbers in the format XART 5785. The "X" before the discipline in the prefix and the four-digit numbers identify the course as non-credit. Non-credit course offerings are listed and described each term in the class schedule. Under the state's definition, a non-credit course "does not offer college credit for completion and generally cannot be used as part of a credit based degree or certificate

program." Non-credit courses will not be counted for financial aid and will not transfer to another institution.

Credit hour - Credit granted at Lane is based on quarter/term hours, since Lane is on a quarter-system calendar. Three quarter hours are equal to two semester hours. One credit hour equates to approximately thirty hours of student involvement over the term. Most credit courses are based on 11 weeks. For one 11-week term, there will be 11 class hours per each lecture credit, 22 classroom hours per each lecture/lab credit, and 33 classroom hours per each lab credit.

Credits - Credits are granted in recognition of work successfully completed in specific courses. The average load for a full-time student is 12-15 credits per quarter. Part-time students carry fewer than 12 credits per quarter.

ExpressLane - Lane Community College students use web registration on ExpressLane. Using the web, students register for classes from any computer connected to the internet.

Direct transfer evaluation - Direct transfer evaluation is done by Academic Advising when a student is in transit to another institution. Unofficial copies of transcripts may be used. Students must take copies of transcripts to Academic Advising for their review of transfer coursework.

Full-time student - A full-time student is anyone carrying 12 or more credit hours per term at Lane. The Social Security Administration defines full-time as 12 or more credit hours per term. Veterans are required to carry 12 credit hours per term to receive full benefits. In most cases, students receiving scholarships are required to complete 12 credit hours per term.

Grades - Students access term grades through ExpressLane. See the section on grades in each term's class schedule for more information on grade availability. An unofficial copy of student grades can be printed for advising purposes. Students can request an electronic, official transcript through the National Student Clearinghouse or in person from Enrollment Services. A current list of fees for transcripts can be found on Lane's website at lanecc.edu/administration/enrollment-services/ordering-transcripts.

Half-time student - A half-time student is anyone carrying between six and 11 credits hours per term at Lane. It is important to know that the definition of a half-time student varies with different institutions. Also, it is important to know that a majority of student loans require a student to be registered for at least six credits or more per term.

Honor lists - Lane students who achieve high academic standards will have that achievement notated on official transcripts. Honor list requirements include:

- President's List: A student must complete a minimum of 12 graded (A,B,C,D,F) credit hours with a term GPA of 4.00.
- Vice President's List: A student must complete a minimum of 12 graded (A,B,C,D,F) hours with a term GPA of 3.55 through 3.99.

Learning modalities - See definitions of the various learning modalities at Other Learning Opportunities.

"L" Number (User ID) - Lane provides all students with a computer-generated user ID for ExpressLane. This number begins with an uppercase "L" followed by eight digits. The "L" number used with a PIN number will give students access to their student information in ExpressLane, including registration, account payments, schedules, grades, and financial aid information. Refer to each term's class schedule for information about obtaining an "L" number.

Miscellaneous training and credit - Credit also may be granted for military training as listed on the ACE/AARTS report for work completed at an approved accredited school. Institutions that are not accredited by an approved agency may be reviewed using the Credit-by-Assessment process.

myGradPlan degree audit system - Lane students may view their progress toward degree and certification completion in ExpressLane under the myGradPlan tab.

Oregon Transfer Module (OTM) - OTM designation can be posted in the student's transcript upon completion at the student's request.

Program - A program is state-approved curriculum that includes credit-bearing courses and which leads to an award (degree or certificate of completion).

Term - A term, or quarter, is approximately an 11-week period of study. The academic year is summer term through the end of spring term with fall, winter and spring terms being the primary terms.

Transfer credits - Students are encouraged to use the Transfer Tool (lanecc.edu/costs-admission/transferring-prior-college-credit-lane) in order to see how credits from other institutions transfer to Lane. Transfer information is updated regularly; some transfer partners will have more extensive listings than others. Students may request an instructional department review of transfer coursework. Please provide an unofficial copy of your transcript showing the grade received

and a course syllabus from the academic year you completed the course to the instructional department.

Procedures

Lane publishes regulations in addition to those in this catalog (class schedule, course syllabus, etc.). Students are responsible for knowing these regulations.

Registration Changes

Schedule changes - Students may change their schedule after their original registration by using ExpressLane. For full-term classes, the last day to withdraw from a course, request a Pass/No Pass grade option or audit a class, is midnight on Friday of the eighth week of the term. A "full term" is 11 to 12 weeks.

Exceptions to this are classes that begin and end at times other than the first and last week of the term. Students can view schedule change information for classes shorter than 11 weeks. Students who withdraw from classes after the first week of the term (refund period) will have a withdrawal notation (W) recorded for the class. Students registered in variable-credit courses may add or drop credits through midnight Friday of the last week of classes before finals week begins.

Dropping/withdrawing from classes - When a student does not attend classes during the first week, they are encouraged to drop classes using ExpressLane before the refund deadline. After the first week of a term, students can withdraw from a course using ExpressLane by midnight Friday of the eighth week of a full-term class.

No Show Drop - Students will be administratively dropped for non-attendance or failure to meet prerequisites. Instructors have the right to administratively drop students who do not attend at least one class session of all class meetings the first week of the term. This period coincides with the refund period. Additional information about Lane's No Show Drop process can be found at www.lanecc.edu/esfs/noshow-drops

- **Do not assume that an instructor will administratively drop you from your class. Students should drop classes they do not plan to attend. It is the student's responsibility to monitor their account and to verify that the class has been dropped for non-attendance.** To receive a refund of paid tuition or a cancellation of tuition not yet paid, the drop procedure must be completed within the refund period. Students who plan to remain enrolled but have attendance difficulties during the first part of the course should notify the instructor to avoid administrative drop.

Prerequisites not met - Students enrolled in classes for which they do not have prerequisite skills, test scores, or courses may be administratively dropped prior to the start of the term or after grades have been submitted for the previous term.

Social Security Number

Generally, social security number disclosure is voluntary. The college does not use social security numbers as a student identification number.

Lane provides all students with a nine digit "L" number as a user ID for ExpressLane. This number begins with an uppercase L followed by eight computer generated numbers. A student's "L" number with a PIN (personal ID number) will be used for ExpressLane functions.

Students who apply for financial aid must supply their social security number on the Free Application for Federal Student Aid (FAFSA). To access on ExpressLane, financial aid students will be able to use their "L" number and PIN.

Disclosure Statement

Required for use in collecting social security numbers See OAR 581-41-460(2) Department of Community Colleges and Workforce Development Revised, January 2001

Providing your social security number is voluntary. If you provide it, the college will use your social security number for keeping records, doing research, reporting, extending credit, and collecting debts. The college will not use your number to make any decision directly affecting you or any other person. Your social security number will not be given to the general public. If you choose not to provide your social security number, you will not be denied any rights as a student. Please refer to the Disclosure Statement listed under the social security heading in your class schedule which describes how your number will be used. Providing your social security number means that you consent to the use of your number in the manner described. You must provide an accurate Social Security number to be eligible for a 1098-T.

On the back of the same form, or attached to it, or in the schedule of classes, the following statement shall appear:

OAR 589-004-0400 authorizes Lane Community College to ask you to provide your social security number. The number will be used by the college for reporting, research and record keeping. Your number also will be provided by the college to the Oregon Community College Unified Reporting System (OCCURS), which is a group made up of all community colleges in Oregon, the State Department of Community Colleges and Workforce Development, and the Oregon Community College Association. OCCURS gathers information about students and programs to meet state and federal reporting requirements. It also helps colleges plan, research, and develop programs. This information helps the college support the progress of students and their success in the workplace and other education programs. OCCURS and the college may provide your social security number to the following agencies or match it with records from the following systems:

- State and private universities, colleges and vocational schools, to find out how many community college students go on with their education and to find out whether community college courses are a good basis for further education
- Oregon Employment Department, which gathers information, including employment and earnings, to help state and local agencies plan education and training services to help Oregon citizens get the best jobs available
- Oregon Department of Education, to provide reports to local, state and federal governments used to learn about education, training and job market trends for planning, research, and program improvement
- Oregon Department of Revenue and Collection agencies only for purposes of processing debts and only if credit is extended to the student by the college

State and federal law protects the privacy of student records. Social security numbers will be used for the purposes listed above.

Student Records/Enrollment Services

Student Records maintains and processes academic records for Lane. This includes but is not limited to online applications for admission, transfer institution transcripts, course substitution forms, grade change forms, student identification documentation, evaluations, registration graduation records, and degree/certificate applications.

Except for the Lane transcript record and current registration, most of this material is archived digitally for all Lane students. Lane transcripts are available on ExpressLane for current students. Most records will be kept indefinitely. If you are a former student and do not know your identification number, you may order your transcripts through the National Student Clearinghouse at www.studentclearinghouse.org

Release of records - In accord with federal law (the Family Education Rights and Privacy Act or FERPA, Public Law 93-380), students may see and review all official records, files, and data pertaining to themselves with these exceptions: confidential financial information reported by the parent/guardian unless the parent/guardian has explicitly granted permission for the student's review; and medical, psychiatric, or similar records used for treatment purposes. Access to a student's own records will be provided as early as possible, but no longer than 45 days from the time of the student's official request.

A student may challenge the content of a record that they consider inaccurate, misleading or in violation of the student's privacy or other rights. If such a challenge is not resolved with the custodian of the records, the student has the right to an appeal. Further information is available in the Enrollment Services/Student Records Office.

Release of records/student information - Per the Family Educational Rights and Privacy Act of 1974 (FERPA), the college has identified directory information that can be released without the student's written permission. The following information is considered directory information and may be released without written permission from a student:

- Student name(s)
- Degree program and major/program of study
- Participation in official activities/sports
- Weight/height of athletic team members
- Dates of attendance (not daily)
- Degrees and awards received
- Most recent previous school attended and photograph
- Enrollment status (half-time/full-time only)
- Date of graduation

If you do not want this directory information released, you must access the student information release links within ExpressLane. Completing this process will place a confidential block indicator on your records at Lane.

If you would like some individuals to access limited information such as your account information, you may also use the Student Information Release process within ExpressLane to provide Lane with a password that you can share with others. Individuals with these passwords must offer these when contacting Enrollment Services and the password must match exactly what you have provided. We cannot assist individuals without this password or without having the exact amount owed given.

Information necessary to determine student eligibility for athletic participation and for financial aid granted by state or federal agencies that provide a student's tuition will be released for those purposes only. This may include term schedules, grades, credit hours of enrollment, and past academic records. A written request from the aid-granting agency is required.

Transcript records - Official transcripts may be ordered through the National Student Clearinghouse at studentclearinghouse.org. Fees vary depending on the delivery method. See Lane's website for current fees: lanecc.edu/administration/enrollment-services/ordering-transcripts.

No other person may receive a copy of the student's transcript or undertake to pick it up for the student unless the student authorizes the release of records in writing. Transcripts sent to other colleges may be ordered through the National Student Clearinghouse, by mail, or in person at Enrollment Services.

- **The college reserves the right to withhold official transcripts from students who owe monies to Lane.** If an official transcript is requested by a student who owes monies, the student is notified that there is a balance owing and given information on how to resolve the issue.

Transfer transcripts - If a student has taken coursework at another college that applies to a program at Lane, the student must see that Enrollment Services receives an official (sealed) transcript of that work. Only official transcripts from regionally accredited U.S. institutions and international institutions with an evaluation agency will be considered. Once received, transcripts become the property of Enrollment Services. Lane cannot provide anyone, including the student, a copy of a transcript from another school. Students should order a copy from their transfer institution for their personal use. Students wishing to have transfer work evaluated should go to www.lanecc.edu/costs-admission/transferring-prior-college-credit-lane

- **Courses from other schools and colleges are never part of a student's Lane Community College transcript.** Transfer institutions may be noted on the Lane transcript. Such records are not required for admission to Lane but may be required for financial aid, veterans' benefit reporting, admission to a special program, or meeting a course prerequisite.

Grades - At the end of each term, grades are recorded and made available to students using ExpressLane. Unofficial transcripts may be printed from ExpressLane.

Grade changes - If an error has been made in recording or reporting grades, the instructor may initiate a grade change. If a student believes an error occurred, the student should contact the instructor. If the number of credits is increased or a course is added, the additional tuition, fees, and any other charges will be charged to the student's account and the student will be billed at current tuition rates. Late add fees may be applied. Refer to the class schedule for more information. If the student owes money to Lane, the added grade will not be processed until the balance is paid in full.

Grades and notations - The following grades and notations are recorded on transcripts and grade records at Lane:

Grade	Points	Definition
A	4.0	Excellent Performance
B	3.0	Good Performance
C	2.0	Satisfactory Performance
D	1.0	Less than Satisfactory Performance
F	0.0	Unsatisfactory Performance
+ or -		Plus or minus 0.30 points, effective July 1, 1999
P	0.0	Pass (equal to A- thru C-)
NP		No Pass (D+ and below)

Grade	Points	Definition
I		Incomplete
U		Audit
Y		No Basis for Grade (Prior to 1997)
NC		No Basis for Credit / Credit Attempted, Not Earned (Eliminated Winter 2019)
XN		Enrolled
EN		Enrolled
CM		Completed
NCM		Not Completed
XCG		Conversion Grade
Immediately following the grade:		
@		Credit by Assessment or CEU by Assessment
<		Academic Renewal (not calculated in cumulative GPA)
* or W		Withdrawal after Refund Deadline (no grade recorded)
E		Repeated Course Points earned not included in the cumulative grade point average (GPA)
~		Credit by Exam or CEU By Exam

Please Note: @ Credit by Assessment and ~ Credit by Exam are limited to 25 percent of a degree or certificate. Students may do more than 25 percent, but only 25 percent may be used toward requirements.

Grade Point Average (GPA) - Included in GPA computation are grades of A+, A, A-, B+, B, B-, C+, C, C-, D+, D, D-, and F. Grades of P are included in earned credit, but not in GPA credit. I, NC, Y, U, *, EN, and W are considered administrative marks rather than grades and have no effect on a student's earned credit or GPA credit. The grades included in the computation have the following weights:

A+	= 4.30
A	= 4.00
A-	= 3.70
B+	= 3.30
B	= 3.00
B-	= 2.70
C+	= 2.30
C	= 2.00
C-	= 1.70
D+	= 1.30
D	= 1.00
D-	= 0.70
F	= 0.00

The total points for a class are calculated by multiplying the points for the grade times the credits for the class. The GPA is then computed by adding all GPA credits, adding all points, and dividing the total points by the total credits. Note - Points are not included in calculation, because of P grade. Total credits earned in this example are nine.

Example	credits	grade	points
BA 226 - Business Law	3	A	12
PE 117 - Strength Training	1	B	3
EL 115 - Effective Learning	3*	P	0*
BT 206 - Co-op Ed: Business Seminar	2	C+	4.60
Total GPA Credit	6	Total Points	19.60
19.60 ÷ 6 = 3.264 GPA			

Term GPAs are calculated using grade points earned only during that term. Cumulative GPA is calculated using all grade points from all terms.

Plus (+) and Minus (-) grades - Issuing a "+" or "-" is at the instructor's discretion. Students with questions regarding an instructor's grading policy must contact the instructor.

Pass/No Pass - When a P/NP option has been selected, the instructor still grades on the regular ABCDF system. If the instructor records an A+ or A, the student will receive the A+ or A grade and it will be calculated in the Grade Point Average (GPA). If the grade is A-, B+, B, B- or C+, C, C-, the student will receive a grade of P. If the grade is D+, D, D- or F, the student will receive a grade of NP. Pass and No Pass grades are not calculated in the student's GPA. A P/NP option must be chosen in the registration system by the end of the eighth week of the term for full-term classes. Information on limitations is listed with the individual degree and certificate outlines.

Audit - The audit option allows the student the right to sit in the class, but the instructor has no obligation to grade or record the student's work. The only grade or mark granted is U (audit). An audit option may be requested during registration and through the eighth week of the term for full-term classes. Audit rates are the same as the tuition rates. The audit counts as attempted credit.

Request for Incomplete - An Incomplete can be provided when a student has satisfactorily completed 75 percent or more of the coursework as defined by the instructor but is unable to finish the remaining required scheduled work due to circumstances beyond the student's control. An Incomplete grade is not used to avoid a failing grade or to address student convenience. In general, a grade of Incomplete is to be made up within one term from the last day of the original term the course was taken but may be extended up to one year at the discretion of the instructor. Assigning an Incomplete requires mutual agreement between the student and instructor, outlined in a contract (or written agreement) that contains the following: a description of the work to be completed, a deadline for its completion, and a standard grade that will be earned if the deadline is not met. The student is responsible for understanding the terms of the contract. The student cannot be required to register again for the Incomplete course (graded or audit) during the term of the Incomplete. At the end of the contract date, the Incomplete will convert to a standard grade as determined by the terms of the contract.

Petition to absolve for repeated courses - A student can have the grade points removed from the cumulative grade point average if the first grade was B, B-, C+, C, C-, D+, D, D- or F and the class has been repeated at Lane. A course can be retaken only once for this purpose. If a course is retaken more than once, only the oldest course credits will be removed from the grade point average under this policy. The repeated course credits must all be taken in one term at Lane, be taken for a letter grade, and must be equal to or greater than the number of credits completed in the original course.

Upon completion of a course, a student can exercise this option by filling out a Request to Absolve Repeated Courses from the Cumulative Grade Point Average form. The form is available at www.lanec.edu/administration/enrollment-services/enrollment-services-forms. The Student Records Office will mark the student's record, noting the repeated course, and remove the credits and grade points of the original course from the cumulative grade point average. The original course and grade will remain on the student's transcript. This cannot be reversed once it is applied to the student's record.

Note: Many institutions will not recognize Petition to Absolve process when calculating a GPA for admission purposes.

Academic Progress Standards (APS) and Alert System

www.lanec.edu/get-support/academic-support/counseling-center/academic-progress-standards

The college has a responsibility to help credit students achieve their educational goals. To meet this responsibility, the college tracks students' progress and provides assistance to students who, for whatever reason, do not meet the college's minimum Academic Progress Standards (APS). These standards are different from the Financial Aid Satisfactory Academic Progress Standards (SAP; lanec.edu/costs-admission/paying-college/financial-aid/satisfactory-academic-progress) and apply to all students.

Academic Progress Standards are based on academic performance for each individual term. **Attaining a minimum GPA of 2.0 and completing at least 67% of attempted credits each term ensures Good Academic Standing.** Should a student fall below either of these performance indicators, an Alert Status will be activated and the student will be required to complete an intervention. At the end of every term, the College will review each student's progress. The following identifies the required interventions if a student does not meet these standards:

Term	GPA	Completion Rate	Academic Standing	Intervention
1st	Less than 2.0	Less than 67%	Alert 1	Access the Alert 1 webpage for further information and recommended student support resources
2nd	Less than 2.0	Less than 67%	Alert 2	Requires Alert 2 - Requires access to your Moodle page and completion of the Success Plan Questionnaire
3rd	Less than 2.0	Less than 67%	Alert 3	Requires enrollment in Alert 3 - Requires access to your Moodle page and completion of the Success Plan Questionnaire
4th	Less than 2.0	Less than 67%	Alert 4	Requires Alert 4 - Requires access to your Moodle page and consultation with a Lane Retention Counselor

Special Note: Attempted credits include all credits a student is enrolled in at the beginning of the second week of the term, after the Refund Deadline. Refund deadlines for summer terms can vary. Check the Refund Schedule

www.lanecc.edu/programs-academics/registration-schedules/schedule-changes-and-grading-important-dates

Student Policies and Complaint Procedures

Lane Community College policies and procedures are subject to change without notice. Up-to-date policies and procedures are available online.

Board Policies Directly Affecting Lane Students

Student Services—Global Directions BP720

With respect to interactions with learners, the president shall assure that procedures and decisions are safe, respectful, and confidential.

Accordingly, the president shall assure that:

1. The institution represents itself accurately and consistently to prospective students through its catalogs, publications, and official statements.
2. Admissions information forms avoid eliciting information for which there is no clear necessity.
3. Methods of collecting, reviewing, transmitting, or storing information about learners will be protected against improper access in compliance with federal and state regulations.
4. Facilities provide a reasonable level of privacy, both visual and aural.
5. The college environment is welcoming and accepting to all learners.
6. Learners have a clear understanding of what may be expected from the services offered.
7. Learners are informed of their rights and responsibilities and are provided a process to address grievances.
8. There is adequate provision for the safety and security of learners.

Harassment Policy BP630 Lane has a zero-tolerance policy regarding all forms of harassment. Any proven harassment will result in immediate and appropriate action to stop the harassment and prevent its recurrence, including employee discipline consistent with collective bargaining agreements, or student sanctions. Remedial action will be designed to stop the harassing behavior. Any remedial action will be in keeping with the educational mission of the college. Whether or not the alleged harassing behavior is sufficiently severe or pervasive to be judged a violation of this policy, the college may take action to address a complainant's concerns and to ensure that Lane, as a workplace and as an academic institution, maintains a respectful environment. All forms of harassment, including student-to-student harassment, are covered by Lane's harassment policies. Incidents of harassment may bring about sanctions up to and including termination of employment or expulsion from the college.

Sexual Harassment Sexual discrimination in the form of sexual harassment is prohibited. Sexual harassment is defined as unwanted sexual advances, requests for sexual favors, and/or other verbal, written, visual, or physical sexual conduct that makes the terms or conditions of employment contingent on the acceptance of unwanted sexual advances, that negatively affect employment or educational opportunities, or that creates an intimidating, hostile, or offensive environment for one of the parties. (lanecc.edu/copps/documents/harassment-sexual-general)

Harassment Based on Race/Ethnicity or National Origin Harassment based on race, ethnicity or national origin is defined as unwelcome verbal, written, or physical conduct based on a person's actual or perceived race, ethnicity, or national origin that unreasonably interferes with an individual's work or academic performance, adversely affects the targeted individual's or others' work or learning opportunities or creates an intimidating, hostile or offensive environment. (lanecc.edu/copps/documents/harassment-based-race-or-ethnicity-or-national-origin-general)

Possession of Firearms BP410 No person, including students, employees, college patrons, and vendors may bring, possess, conceal, brandish, use or be in possession of a firearm, destructive device, or other dangerous weapons as defined by law, or give the appearance of being in possession on college-owned or controlled property or at activities under the jurisdiction or sponsorship of the college, except as provided by ORS 166.370 and federal law. As authorized by ORS 659A.001(4), the exceptions provided by state and federal law do not apply to Lane employees while engaged in work activities. Permitted exceptions include use in conjunction with approved instructional demonstration.

Use of Intoxicants and Controlled Substances BP420 No person may bring onto college property or into any college-owned facility or to any college-sponsored class or activity any intoxicating beverage, controlled substances, volatile inhalants, except in the situations specified in this policy. No person may appear on college property or in any college-owned facility or in any college-sponsored class or activity under the influence of any of the above-mentioned substances. Under no circumstances shall alcohol be served at college-sponsored activities to underage minors as defined by state law.

Exceptions to this policy are as follows:

1. Alcoholic Beverages may be used/served:
 - a. for cooking and/or instructional purposes in food preparation labs or classes and in labs or classes related to the science and/or service of alcohol; or
 - b. at college-sponsored or on-campus activities catered by legally licensed and insured businesses or agencies with prior approval using procedures specified in college administrative rules (see Alcoholic Beverages on Campus).
2. With appropriate documentation, prescription opiates, or other psychoactive medications, may be used as legally prescribed by a licensed practitioner. However, according to statute, marijuana shall not be ingested on campus even with a medical marijuana card.
3. Glue and thinners may be used only in class-related lab environments and in facilities construction and maintenance for non-intoxicating purposes.

Admission for Credit Students BP705 Lane Community College accepts all students who are 18 or over or have a high school diploma or GED. Students who are under 18 and have not graduated may still attend if they follow the guidelines for Under 18 Students. Under no circumstances shall an applicant who is otherwise qualified be denied admission or given a preference for admission to the college based on an individual's race, color, national origin, sex, age, marital status, familial relationship, sexual orientation, gender identity, pregnancy, mental or physical disability, religion, expunged record, veterans' status or association with any member of these protected groups.

Tuition BP725 Research in community colleges broadly and experience at Lane has shown that implementing a single large increase in tuition in one year because tuition has not kept pace with inflation has a significant adverse effect on student enrollment in the next academic year.

In order to maintain a constant tuition rate relative to inflation, each year, the board may consider an appropriate index for two-year public colleges on which to discuss a tuition increase. Each year, the board may adjust the per credit tuition rate to reflect the needs of the college. The rate will be rounded to the nearest half-dollar and become effective the following academic year (Summer Term).

For other adjustments:

Each year, the board will review Lane's tuition rates to ensure: a) that tuition revenues are appropriate for the needs of the district, b) that Lane's tuition is

comparable with other Oregon community colleges that are similar to Lane in terms of student FTE and instructional programs, c) access and affordability, and d) the revenue requirements of the college. Should the board conclude that increases above the selected index are required, the board will assure that there are college-wide opportunities, particularly with students, to engage in discussions about the impact of tuition increases on access, affordability, and course offerings.

Should the board conclude that tuition should be reduced, the board will similarly assure that there are opportunities to engage in college-wide discussions about the impact on course offerings, access, and affordability.

Student Complaint Procedure

www.lanecc.edu/copps/documents/student-complaint-procedure

Purpose The formal complaint procedure is designed to resolve problems for students who are having difficulties with other students or staff that cannot be resolved through the informal report and resolution process, or that students choose to have investigated and judged in a formal setting. This procedure details the filing process and lists other types of complaint procedures. Although the process is confidential, a student's identity cannot be withheld from the person(s) identified as the source of the problem.

Narrative

Before filing a formal student complaint, students are encouraged to attempt to resolve the issue with the manager of the area or division/department involved.

In addition, complaints against faculty cannot be pursued through this process. Student complaints about faculty members shall be made to the division dean who is that faculty member's supervisor and shall be subject to the dispute resolution procedures as outlined in the faculty contract. If the student believes that the supervisor has not resolved the issue, the student may appeal to the supervisor's Executive Dean.

Type of Complaint	Explanation	How to file a complaint	How to appeal a complaint outcome
Academic issues: Grade & Degree Appeal	A student may appeal specific grades, probation and dismissal, and degree requirements. Students are directed to appropriate forms, documents, and departments to consult for specific appeal processes.	General Education Substitution and Waiver Petition	Appeals for issues related to Lane Community College's academic probation and/or dismissal policy must be made in writing to the Academic Progress Review Committee through Enrollment Services (Bldg 1).
Discrimination or harassment	This discrimination and harassment complaint procedure is designed to provide all members of the College community with a process for reporting incidents of discrimination or harassment, and to provide for prompt and effective response to and resolution of reports of discrimination or harassment.	Complaint Form	Any appeal must be submitted via email sent to Code and Complaint Appeals within 5 working days of the date of the outcome letter. This appeal must allege a procedural violation.
Disability issues	The process by which students, staff, or members of the public may seek formal or informal resolution to an access complaint under the provisions of the Americans with Disabilities Act	Code and Complaint Appeals within five working days of receiving the resolution. The college will respond in writing.	
Faculty/Curriculum	Student complaints about faculty members or curriculum shall be made to the division dean who is that faculty member's supervisor.	Complaint Form	Appeal must be sent in writing to Code and Complaint Appeals within 5 days of the outcome letter.

Type of Complaint	Explanation	How to file a complaint	How to appeal a complaint outcome
General	Examples of general complaints include staff, department, procedures, etc.	Complaint Form	Appeal must be sent in writing to Code and Complaint Appeals within 5 days of the outcome letter.

Timelines The formal complaint procedure is set up to take no more than 50 working days. To have remedy under the formal complaint process, complaints must be filed within 90 days of the incident. Complaints filed more than 90 days after the incident will not be accepted.

Impartial Decision Makers Complainants who do not feel that they have access to impartial decision makers under the procedure outlined below should immediately notify a campus advocate of their concern.

Advocates Assistance with the complaint process is available at Counseling, Student Life and Leadership Development, and the Gender Equity Center.

Record Keeping All records of the formal complaint process, including the complaint form and all reports and findings, are the property of the college. A formal complaint report that summarizes all formal complaints will be forwarded to the president, vice presidents and division/department managers on a periodic basis. No information that would identify the complainant or the accused will be included in this report.

How to File a Formal Complaint

Step 1: The complainant Completes a Complaint Form.

Step 2: The complainant submits the complaint form online or brings a paper copy to the office of the Vice President, Academic, and Student Affairs. The office is located on the 2nd floor of the Administration Building (Building 3, Main Campus).

Step3: A Student Complaint Officer will be assigned or the complaint will be directed to the appropriate contact. The complainant will receive a letter via email with the contact person's information or the Student Complaint Officer's information as appropriate. The Vice President, Academic and Student Affairs will assign a Complaint Officer and will provide written notification of the complaint to the accused within five working days of receiving the complaint. Campus advocates are available to assist throughout this process. In some instances, the Vice President, Academic and Student Affairs may choose to hear the complaint at her discretion.

Step 4: The Complaint Officer will conduct an investigation.

Step 5: The Complaint Officer notifies the complainant and the accused of their findings. Notification of findings will be sent within 20 working days of the complaint being filed. The complainant will receive the results of the investigation in writing. The complainant will review the findings and decide if they are satisfied with the results. If they are not satisfied with the results, they may proceed to Step 6.

Step 6: The complainant may appeal the ruling by sending an email to CodeandComplaintAppeals@lanecc.edu within five days of receiving the outcome letter. The Vice President, Academic and Student Affairs reviews the investigation and findings. The Vice President, Academic and Student Affairs may refer the appeal to a hearings committee at their discretion. If the Executive Dean was the original decision maker in the complaint, the appeal will go to the Vice President of Academic and Student Affairs.

Step 7: A final decision is made. The Vice President, Academic and Student Affairs will make the final decision on the appeal and notify the complainant and the accused in writing within 10 working days.

Substance Abuse

Please contact the Lane Community College Counseling Center at www.lanecc.edu/get-support/academic-support/counseling-center

Student Rights and Responsibilities and Student Code Preamble

Lane Community College exists for the transmission of knowledge, the pursuit of truth, the development of students, and to contribute to the community which it serves. Free inquiry and expression are vital to the attainment of these goals. As members of the academic community, students are encouraged to develop the skills for critical judgment and a life-long search for truth. The minimum standards of academic freedom and conduct are outlined in the Student Code of Conduct. The privilege to teach and to learn are inseparable facets of academic freedom. Students and staff should exercise this freedom with responsibility.

Lane resolves to provide an atmosphere conducive to learning where faculty instruction and student learning occur without external pressure, interference or disturbance. The college vision statement: "Lane provides quality learning experiences in a caring community," embodies the belief that staff and students are expected to conduct themselves in a manner that acknowledges and values a wide range of opinions, beliefs, and perspectives.

The purpose of this document is to outline the essential provisions for academic freedom and to guide students in becoming responsible participants in the college community.

Freedom of Access to Higher Education

Lane Community College is open to all persons who are qualified according to its admission and good standing requirements. Anyone age 18 or older may enroll. No high school diploma is necessary. Individuals younger than 18 may attend if they obtain approval from their high school principal or if they have already received their high school diploma. Community education classes generally are open to anyone 16 or older.

Under no circumstances will an applicant be denied admission to the college because of age; sex; race; color; religion; physical or mental disability; national origin; marital status; sexual orientation; pregnancy; veteran's status; familial relationship; expunged juvenile record; association with anyone of a particular race, color, sex, national origin; nor will preference for admission be based on economic status.

Financial Aid

Although the primary responsibility for meeting college costs rests with students and their families, Lane recognizes that many individuals cannot assume the full financial burden of the costs of a college education. For this reason, financial aid is available to bridge the gap between the costs of education and the available student/family resources. Students must complete a Free Application for Federal Student Aid and meet a variety of federal and state eligibility criteria. For more information, contact the Financial Aid Office 541-463-3100.

The financial aid application process is time-consuming. To receive the maximum amount of aid, it is important to accurately complete all the necessary forms in a timely manner. Financial aid application forms are available in January for the following school year. Applications are available from the Financial Aid Office, the Downtown Center, Lane Community College at Florence and Cottage Grove, and all high schools.

Admissions

The college will be open within budgetary limitations to all applicants who are qualified according to its admission requirements. Students who enroll for high school or alternative school credit must comply with the Oregon Revised Statutes 339.010 (Compulsory School Attendance Law). While previous academic status at other institutions will not constitute criteria for denial of admission, not every program is open to every student. Priority to enter classes of limited enrollment will be given to in-district students who have finished high school and/or are at least 18 years of age. However, the college will assist each student to develop a program of study which meets his or her individual needs and is consistent with feasible college operations. The college is committed to equality of opportunity, affirmation action, and nondiscrimination in admissions. No applicant shall be denied admission to the college because of protected class status.

Financial Responsibility

It is the student's responsibility to pay monies owed to the college in a timely manner. The college's policies regarding the payment of tuition and fees are described in the term schedule as well as the college catalog.

Evaluation Criteria

Academic - Lane Community College instructors will encourage free discussion, inquiry and expression where relevant and appropriate to the educational objectives of the course. *It is the instructor's responsibility to publish educational objectives and to make available to each class the criteria to be used in evaluating student success in that class. It is the responsibility of the students to become aware of these objectives and criteria as published and set forth by the college.* Student opinions and behavior outside of class will not be the basis for determining class grades unless such evaluation is specifically related to course requirements.

Protection of Freedom of Expression - Students are responsible for learning the substance of any course of study for which they are enrolled. However, students

are free to state any reasoned exception to data or views offered in any course of study and to reserve judgment about matters of opinion. See also Freedom of Inquiry and Expression.

Protection Against Improper Academic Evaluation - Students have protection through orderly procedures against unfair academic evaluation. Students' grades will be based solely on academic achievement unless otherwise specified by the professor in writing at the first class meeting. Complaints about class requirements and grades must first go through the instructor and the division/department chair. Students may appeal grades received by following the process described in Grade, Academic and Degree Appeals.

Protection Against Improper Disclosure - Information that staff acquires in the course of their work as instructors, advisors, and counselors about student views, beliefs, and political associations should be considered confidential. Protection of the student against improper disclosure is a staff obligation.

Utilization of the Center for Accessibility Resources

The Center for Accessibility Resources (CAR) is committed to providing opportunities to all students with disabilities in order for them to have meaningful access to college programs and services in a barrier-free environment. Lane's Center for Accessibility Resources offers academic accommodations for the removal of barriers to the learning environment and provides: test and in-class accommodations, resource/referral information, alternate formatting of required materials, and adaptive equipment/furniture. These services are available to students with disabilities who are attending credit courses, Adult High School, Adult Basic Education, and Continuing Education classes on any of the Lane campuses. Students must request services by following the procedures described on the Center for Accessibility Resource's website and the Center for Accessibility Resources Student Agreements web page.

Academic Dishonesty

Students are expected to conduct their academic affairs in a forthright and honest manner. In the event that students are suspected of classroom cheating, plagiarism or otherwise misrepresenting their work, they will be subject to due process as outlined in the Student Code of Conduct.

Standards of Academic Progress

Lane has established standards for academic progress that are applicable to all students. Failure to maintain satisfactory academic progress will result in loss of financial aid and warning, probation, suspension, or dismissal from the college.

Complaint Procedure

See Student Complaint Procedure.

Student Records

Lane Community College will abide by federal and state regulations regarding the privacy of student records and comply with the law regarding access procedures. The condition of access to records is set forth in explicit statements. Transcripts of academic records contain only information about academic status. Information from disciplinary or counseling files will not be available to unauthorized persons on campus or any person off campus without the express written consent of the student involved, except under legal compulsion or in cases where the safety of persons or property is involved. Administrative staff and faculty members will respect confidential information about students that they acquire in the course of their work.

With regard to official documents and student records, information acquired by Lane employees about a student's views, beliefs, and political associations is confidential and is not to be disclosed unless required by state or federal law. All student records will be maintained in strict compliance with state and federal regulations and Lane personnel procedures defining privacy and confidentiality.

Student Affairs

The college has the responsibility and obligation to establish certain standards in order to preserve the freedom of students.

Freedom of Association

Students will be free to organize and join associations to promote their common interests as long as they do not disrupt the college or violate its rules and regulations.

1. Procedures for recognition of student organizations - Students who would like to start a new organization, or join an existing organization should contact the Associated Students of Lane Community College

(ASLCC) offices for information. The process is simple and, once student groups receive official recognition from ASLCC, they are eligible to reserve space on campus, conduct activities and co-sponsor events. See also Student Organizations Guidelines.

2. Advisors - All student organizations must have a staff advisor. Upon approval of the director of Student Life and Leadership Development, any Lane staff member is eligible to serve as advisor for student organizations.
3. Non-discrimination policies - Student organizations must abide by existing college and ASLCC policies and may not restrict membership or participation in events.
4. A recognized club or organization may lose its official recognition and be suspended if actions of its officers or members, or activities of the organization as a whole, violate college policies & procedures.

Freedom of Inquiry and Expression

Students and student organizations will be free to examine and discuss all items of interest and to express opinions publicly and privately. Students will always be free to support causes by orderly means, in ways that do not disrupt the operation of the institution or violate college policies and procedures.

Use of Facilities

The facilities and services of the college will be open to all of its enrolled students, provided the facilities and services are used in a manner appropriate to the academic community and in compliance with college procedures. Student Life and Leadership Development reserves table space and assists student organizations in scheduling space with the college. See Facilities: Use in General.

Student Participation in College Policies

Students are free to express their views, individually and collectively, on issues of institutional policy and on matters of general interest to the student body. Student representatives are welcome on college committees and councils, and the ASLCC president represents student interests to the board.

Student Publications

With respect to student publications, the Media Commission shall be responsible for the appointment of editors, dismissal of editors for cause, recommendation of policies, professional advice, and informal guidance. The Media Commission is the first level of appeal and review for all questions concerning publications policy and operation. Final appeal is through the college president and then the college board. The student press is to be free of censorship and advance approval of copy. The editors and managers shall not be arbitrarily suspended, suppressed or intimidated because of student, student government, employee, alumni, or community disapproval of editorial policy or content. Similar freedom is assured for oral statements of views on college-controlled and/or student-operated radio or television stations and student-produced programs. This editorial freedom entails a corollary obligation under the canons of responsible journalism and applicable regulations of the Federal Communications Commission.

Neither the commission nor the president is involved in day-to-day decisions or operations of the student media. Responsibility for the content of publications and for compliance with established policies rests with the student editors and their staffs. Editors and their staffs are guided by the professional standards of the Oregon Code of Journalistic Ethics, and by state and federal laws. Advisors are not responsible for the content of student publications.

Guidelines for the Media Commission shall be contained in administrative rules and procedures.

Distribution of Literature

First Amendment freedom of the press is applicable to the campus of Lane Community College. Students and the distribution of off-campus publications are protected on the main campus and outreach centers. Distribution may be restricted only if it can be shown that such activity would cause a disturbance or disruption of normal college activities. Materials to be posted require authorization for such distribution from the director of Student Life and Leadership Development. Once authorized, the distribution will take place in the prescribed locations on campus, should not disrupt the normal operation of the institution, and should not cause a litter problem on the campus.

In case a student, employee, or organization is denied the right to distribute materials on campus, the decision is subject to appeal. All appeals or complaints are subject to the student complaint procedure.

The college reserves the right to designate specific areas for the distribution of printed materials. A listing of these areas is maintained by the director of Student Life and Leadership Development on the main campus and by the designated building administrator at each of the following outreach centers: Downtown Center, LCC at Florence and LCC at Cottage Grove. See also Distribution of Literature.

Visiting Speakers

The college has the responsibility to develop informed, critical and objective thinking; and such thinking can best be encouraged in an atmosphere assuring a free interchange of ideas. Therefore, Lane students may invite to the campus and hear any person(s) of their choosing in compliance with administrative regulations governing scheduling, publicity, and management of campus activities. The education of students is not limited to classroom activities. Students have the right to hear a variety of outside speakers. Student Life and Leadership Development and ASLCC are the primary program sources for outside speakers. Individual students or student organizations may request that ASLCC sponsor speakers or may contact Student Life and Leadership Development about other possibilities. All outside speakers must be scheduled through Student Life and Leadership Development to ensure that there is proper scheduling of facilities and other preparations for the event and that the event is conducted in an orderly manner appropriate to the academic community. Institutional control of campus facilities will not be used to censor activities. Sponsorship of guest speakers may be withheld if there are reasonable concerns that the controversial nature of the speaker or content of the speech would lead to disruptions on campus. It is the responsibility of the students sponsoring the event to make it clear to the campus community and the local community that all views expressed are not necessarily those of the students, staff or administration of Lane Community College.

Grievance Procedures for Alleged Discrimination or Harassment

Students who feel they have been discriminated against or treated in some unfair manner have access to formal and informal grievance procedures. See specific procedures outlined in: Student Complaint Procedure; Grade, Academic and Degree Appeals; Discrimination and Harassment Complaint Procedure; Disabilities: Americans With Disabilities Act Complaint Procedures and Affirmative Action Guidelines and Complaint Procedures.

Discipline

Student Code of Conduct lanecc.edu/sites/default/files/copps/code_of_conduct.pdf applies to anyone accepted for college admission, registered for one or more classes and/or enrolled in any special program approved by Lane Community College. Students are required to provide identification such as a photo identification card, current registration receipt or class schedule on demand to campus security personnel, faculty or administrators.

Students deserve fair and equal treatment, so instructors and administrators must employ discretion when initiating disciplinary actions and procedures. Action is warranted for protection of individuals, property and a positive learning climate. Faculty members may dismiss a student from a class for the day for in-class behavior they judge to be disruptive or inappropriate. Such actions include, but are not limited to: racial, sexual, or religious slurs; verbal or physical interruption; offensive language; chewing tobacco or spitting; smoking; and littering or creating unsanitary conditions.

If a student is dismissed for inappropriate behavior, faculty must submit a written report to their division/department chair and to the vice president of Academic and Student Affairs detailing the student's name, date and time of class, and the improper behavior.

Students may be dismissed only for the day of the misbehavior, but may be dismissed from subsequent classes for a new or repeated behavioral offense. Dismissal as a result of faculty action is counted toward the maximum number of absences allowed in the class.

Public Safety may be called to assist in any disciplinary situation. The assisting security officer must file a report with the vice president of Academic and Student Affairs on all disciplinary situations.

Instructors, administrators, and classified staff are authorized to employ physical restraint when immediate restraint will prevent injury to the student or others. Physical restraint is not considered a form of physical discipline. The instructor, administrator, or classified staff should send a reliable person to the nearest telephone to request emergency assistance from Public Safety.

Off-Campus Program Students

Students enrolled at Lane Community College satellite campuses (Cottage Grove, Florence, Downtown Center, Community Learning Centers, and outreach sites) will enjoy the same rights and responsibilities as the students at the main campus and must comply with the Student Code of Conduct and any additional rules for conduct which are specific to the site.

Security and Safety at Lane

The Federal Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act, requires colleges to publish information about crime on their campuses. A copy of Lane's Annual Security (Clery) Report is located at www.laneccc.edu/administration/public-safety-department/clery-compliance-information or may be obtained in writing at the Public Safety office. At Lane, security and safety are college-wide efforts. With students, faculty, and staff committed to prevention, crime can be minimized.

The Lane Community College Public Safety Department provides direct services to the 30th Avenue campus, Downtown Campus, and Titan Court. The Cottage Grove and Florence campuses, Lane's Aviation Academy, KLCC radio station, and the Willamette Dental Clinic receive investigative, training, prevention, and consulting services from Public Safety, but are primarily served by their local law enforcement agencies. Police departments in these jurisdictions also report incidents to the college's Public Safety department. Public Safety provides services at the Downtown Campus including the Titan Court residential facility 6 days a week. To contact a downtown officer, call 541-463-6267.

Lane Community College Public Safety Officers are certified under the Oregon Department of Public Safety Standards and Training. Officers maintain an atmosphere conducive to education, contribute to a safe campus environment, enforce parking and traffic regulations, conduct investigations of reported crimes, and share reports with other law enforcement agencies.

Public Safety officers are authorized to enforce motor vehicle and parking laws on campus. Officers are charged with responding to crimes, medical emergencies, and violations of college policy/rules or college policy violations. In addition, officers utilize law enforcement tools such as the Criminal Justice Information System and other investigative systems.

Preventing Crimes

Education The majority of criminal incidents on campus result from leaving property unattended, lockers unlocked and valuable property visible in cars. The Public Safety Department provides speakers on crime prevention, active shooter/violent actor response, self-defense, personal safety, sexual assault prevention, and other criminal justice and safety topics.

Intoxicants Drugs and intoxicants are not permitted on campus, except under very specific circumstances, which are detailed in the Student Policies section. Special note: Marijuana use or possession in any form remains illegal on all of Lane Community College's campuses and properties.

Lighting and Landscaping College staff work constantly to maintain good lighting and to clear undergrowth to improve visual access on campus and prevent crime.

Patrol Service Public Safety conducts patrols of the campus by squad car, bicycle, and by foot. This comprehensive patrol policy promotes community policing and crime prevention activities. In addition to patrol service, Public Safety works closely with the Lane County Sheriff's Department, Eugene Police Department, and federal agencies such as Homeland Security and the FBI.

Emergency Assistance

Public Safety Officers are always on duty (24/7/365) on campus. To contact Public Safety:

Red Telephones Use one of the red telephones on main campus. These emergency phones automatically ring in the Public Safety department when the receiver is lifted.

Blue Telephones There are a small number of "blue" emergency phones located in outside areas of the campus. These phones connect directly to Public Safety Emergency (5555).

All emergency phones are checked quarterly to ensure that they function.

Dial 5555 On campus dial or ask a staff member to dial 541-463-5555 for emergencies from other college phones to reach Public Safety.

Non-emergency Dial 541-463-5558 for non-emergency calls.

Campus Elevators All call boxes in elevator cars connect to Public Safety Emergency (5555).

Emergency Car Services Emergency car battery packs are offered 24 hours a day. Call or visit Public Safety. Individuals must pick up the packs at Public Safety, building 12, Room 200 and a valid photo ID is necessary for this free service.

Public Safety does not assist in vehicle entry but will assist in contacting local locksmiths or other help.

Emergency Escorts If your safety is threatened, contact Public Safety and an officer will be dispatched.

Reporting and Response

Anyone knowing of or suspecting a crime should promptly report it to Public Safety in Building 12, Room 200. When a suspect is apprehended, the suspect may be taken into custody, cited, issued an order to appear, or subject to other campus and court referrals. Public Safety Officers may also facilitate contact between the victim and other law enforcement agencies.

Services

In addition to direct law enforcement services and support, Public Safety will also make referrals to other appropriate campus offices to assist complainants and crime victims. These referrals include, but are not limited to: The Gender Equity Center, the Title IX officer, Academic and Student Affairs, Veterans Resource Office, Human Resources, the Center for Accessibility Resources, the Counseling Center, and the Mental Health and Wellness Center.

Other Services Public Safety provides numerous other services including: criminal background checks, access control system assistance, dignitary protection, alarm monitoring and response, safety escorts, copies of accident reports, personal safety instruction, and safety planning.

Public Safety also maintains the official campus lost and found service. Individuals who have lost or found property, should contact Public Safety at 541-463-5558 or stop by the Public Safety office.

Reported Crimes

The number of crimes reported to Public Safety and local law enforcement in the categories set forth in the Crime Awareness and Clery Act, as well as the complete campus Annual Security Report, may be found at the Public Safety website: www.laneccc.edu/administration/public-safety-department/clery-compliance-information

For more information about Lane's Public Safety Department, contact 541-463-5558.

Degrees and Certificates

Associate of Arts Oregon Transfer (AAOT)

The Associate of Arts Oregon Transfer (AAOT) degree is a state-approved associate degree that is intended to prepare students to transfer to public universities in Oregon. The AAOT is a block-transfer degree, which means a student with an AAOT will have met the lower-division general education requirements for baccalaureate degree programs at Oregon public universities. Students transferring with an AAOT degree will have junior standing for registration purposes only.

Students who receive the AAOT and transfer still must meet the receiving university's admission requirements, including course standing, grade point average and foreign language requirements. The AAOT does not guarantee admission to a public university, admission to a competitive major, or junior standing in a major.

Approved courses for associate degrees: Each student is strongly encouraged to work with an academic advisor to match career and major goals with an appropriate program and to select appropriate courses for a major at an intended transfer institution. For current Lane courses that meet AAOT requirements, see: Approved Discipline Studies Courses for Associate Degrees and Oregon Transfer Module

Estimated Cost: \$15,408

- Resident Tuition: \$11,925*
- Technology Fees: \$1,170
- General Student Fees: \$813**
- Online Course Fees: *** (if applicable)
- Books / Course Materials: \$1,500****

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.laneccc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

General Education degree costs are based on 90 credits and 6 terms.

*Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

***Online Course fees: \$10.00 per course, maximum of \$50.00 per course

****Books and materials will vary by class. Please refer to your program or course for specific information on book and material charges. Open Educational Resources (OER) may be available to take the place of more expensive textbooks, reducing the overall cost of taking the class. For more information on classes using free and low-cost materials, visit <https://inside.lanecc.edu/oer> or email oer@lanecc.edu

Learning Outcomes

This degree is aligned with Lane's Institutional Learning Outcomes and the State General Education Learning Outcomes.

Guidelines

1. Complete a total of 90 credits of college-level coursework (see notes).
2. Complete at least 24 credits at Lane.
3. Foundational Skills and Discipline Studies courses must be a minimum of 3 credits, except for Health/Wellness/Fitness courses, which may be any number of credits.
4. All Elective courses may be any number of credits.
5. All courses must be completed with a grade of "C-" or better, or Pass.
6. Maximum 16 credits "P" may be used toward the degree. This limit does not include courses only offered P/NP.
7. Cumulative GPA must be at least 2.0 at the time the Associate of Arts Oregon Transfer is awarded.

Foundational Skills

Writing

A student must have eight credits of Writing. Writing meets the Information Literacy requirement.

If all writing courses are 4 or more credits, complete Option 1:

Option 1 - Two courses (8 credits):

- 1) WR 121_H / WR 121 - Academic Composition 4 Credit(s)
- 2) And complete **one** of the following:
 - WR 122_H / WR 122 - Argument, Research and Multimodal Composition 4 Credit(s) or
 - WR 227_H / WR 227 - Technical Writing 4 Credit(s)

If any writing course is 3 credits, complete Option 2:

Option 2 - Three courses (9-11 credits):

- 1) WR 121_H / WR 121 - Academic Composition 4 Credit(s) and
- 2) WR 122_H / WR 122 - Argument, Research and Multimodal Composition 4 Credit(s)
- 3) And complete **one** of the following:
 - WR 123 - Composition: Research Writing 4 Credit(s) or
 - WR 227_H / WR 227 - Technical Writing 4 Credit(s)

Oral Communication

Complete one course from the Oral Communication list

Mathematics

Complete one course in college-level mathematics:

- MTH 105 - Math in Society 4 Credit(s)
- MTH 106 - Math in Society 2 4 Credit(s)
- MTH 107 - Math in Society 3 4 Credit(s)
- MTH 111 - College Algebra 5 Credit(s)
- MTH 112 - Trigonometry 5 Credit(s)
- Any 200-level mathematics course

Health/Wellness/Fitness

Complete one or more courses, totaling at least three credits, from the Health/Wellness/Fitness list.

Discipline Studies

Cultural Literacy

Complete one course from any discipline studies courses designated as meeting the statewide criteria for Cultural Literacy. Courses approved for the Cultural Literacy requirement are marked with ^{CL} in the lists of courses on the

Approved Discipline Studies Courses for Associate Degrees and Oregon Transfer Module. The credits for Cultural Literacy courses will only be counted once toward the 90 credits required to complete the degree.

Arts and Letters

Complete three courses from two or more disciplines from the Arts and Letters list.

Social Science

Complete four courses from two or more disciplines from the Social Science list.

Science/Math/Computer Science

Complete four courses from two or more disciplines, including at least three laboratory courses in Biological and/or Physical science, from the Science/Math/Computer Science list.

Notes:

-Biology: 100-level Biology courses are not repeatable. Students may only use one BI 101, one BI 102, and one BI 103 to meet requirements for any Lane degree, regardless of letter option. BI 213B - Principles of Botany and BI 213Z - Principles of Zoology are considered repeats at some four-year universities. Students will only receive credit for one course. Please contact your academic advising team for details.

-Chemistry: General Chemistry and Organic Chemistry series have separate lab courses. It is highly recommended students take lecture and lab courses together. To complete an AAOT Lab Science requirement, both lecture and lab courses must be completed.

-Computer Programming: Students who complete more than one CS 161 or CS 162 programming language course should be aware that transfer institutions may count multiple 161 or 162 courses as repeats, **and may not accept them in transfer**. Students wishing to complete multiple programming courses should first take a CS 161/162 series and then enroll in CS 133/233 course series for any subsequent programming languages.

Electives

Any college-level courses that bring total credits to 90 credits including:

- Up to 12 credits of Career Technical Education. See the list of Course Types by Prefix. Policies on accepting career-technical credits vary at four-year institutions in Oregon. Consult an academic advisor about taking these courses within the degree.
- Up to 18 credits of Cooperative Education may be included as electives. Cooperative Education courses identified as Career Technical Education courses count toward the 12-credit maximum for Career Technical Education.
- Up to 12 credits of Individual Music Lessons (MUP).
- 12 credits of Physical Education activity (PE, PEAT, PEO) may be included within the entire degree
- Transfer institution requirements. Consult Lane's Academic Advising department for a list of recommended coursework. Transfer institution requirements may change without notice.

Notes

1. College-level courses are numbered 100 or higher. Courses numbered 001-099 identify developmental courses (e.g. RD 090), with the exception of ENG 110, 116, 117; MTH 100, RD 115, WR 110, 120 and WR 115 (taken before summer 1999), which are also considered developmental.
2. Foundational Skills are open to demonstration of proficiency. For information on waiver testing or credit for prior learning, contact an academic advisor. Waiver testing is not the same as placement testing.
3. 200-level second language courses count toward the Arts and Letters requirement. American Sign Language (ASL) is considered a second language.
4. University second language admission requirements for transfer students graduating high school 1997 or later include one of the following:
 - Two terms of the same college-level second language with an average grade of C- or above.
 - Two years of the same high school-level second language with an average grade of C- or above.
 - Satisfactory performance on an approved second language assessment of proficiency.

- Demonstrated proficiency in American Sign Language meets second language admission requirements.
- 5. Credit-by-Exam and Credit-by-Assessment may comprise no more than 25% of total degree credits.
- 6. Only the Academic Requirements Review Committee (ARRC) may waive a college-related instruction requirement. Petitions are available from Enrollment Services at lanecc.edu/esfs/general-education-substitution-and-waiver-petition.
- 7. Repeatable courses may be used once to meet a Discipline Studies requirement. Any additional allowable repeats may be used to meet Elective requirements.
- 8. Some courses are included on more than one Discipline Studies list. These courses may be used only once to meet a specific Discipline Studies requirement. Please contact your academic advisor for details.
- 9. Lower-division college-level courses taken at Lane will not always meet the same requirements an upper-division college-level course with similar content does at a four-year transfer institution. In such cases, the course(s) in question will generally transfer as an elective. Please contact specific four-year schools for details.
- 10. General Information on in transferring credits in from a prior institution: lanecc.edu/esfs/general-information-transferring-credits
- 11. Courses numbered 197, 198, 199, 280, 297, 298, or 299 count as electives and do not meet Foundational Skills or Discipline Studies requirements. Courses numbered 199 and 299 are experimental and may later be reviewed and approved to meet Discipline Studies requirements.
- 12. Although the AAOT degree provides an excellent framework for many students pursuing a baccalaureate degree, it is not ideal for all students. Students should consult with an academic advisor.
- 13. HE 252 can be used in the Health/Wellness/Fitness category if taken in Summer 1997 or after. Prior to this, HE 252 would be considered an elective.

Elementary Education, AAOT

This degree is dependent on students selecting and working with their transfer institution early in the program. Contact an academic advisor for help determining a degree plan.

Length: 90 credits

Program Contacts

- Academic Advising: lanecc.edu/get-support/academic-support/academic-advising/connect-advising 541-463-3800; academicadvising@lanecc.edu
- Note - Students are strongly encouraged to work with an academic advisor to select courses and map a plan that matches career and transfer major goals

Estimated Cost: \$15,408

- Resident Tuition: \$11,925*
- Technology Fees: \$1,170
- General Student Fees: \$813**
- Online Course Fee: (if applicable)
- Books / Materials: \$1,500

Costs provided are estimates only. Learn more about current per-credit and banded tuition rates and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

***Online Course Fees: if applicable; \$10.00 per course, maximum of \$50.00 per course

****Books and materials will vary by class. Please refer to your program or course for specific information on book and material charges. Open Educational Resources (OER) may be available to take the place of more expensive textbooks, reducing the overall cost of taking the class. For more information on classes using free and low-cost materials, visit <https://inside.lanecc.edu/oer> or email oer@lanecc.edu

Program Learning Outcomes

This program outlines specific course requirements for students who plan to transfer to a four-year public university in Oregon and earn a Bachelor's degree in Elementary Education. Students should work with an academic advisor to ensure they fulfill the requirements for this program and for their intended transfer institution. Students seeking alternative accepted pathways should consult with an academic advisor.

Students who complete this program will be able to:

PLO 1 - Apply critical thinking to analyze social issues necessary to support the function of public education

PLO 2 - Describe culturally-responsive pedagogy and integration of social justice into a teaching philosophy

PLO 3 - Identify the ethics and responsibilities necessary to obtain a professional license in the teaching field and clarify career confirmation

Guidelines

1. Complete a total of 90 credits of college-level coursework (24 credits must be completed at LCC).
2. General Education courses must be a minimum of 3 credits. Elective courses may be any number of credits.
3. Elem Ed Major requirements (ED and MTH 211-213) must be completed with a grade of C- or better. P/NP is not accepted. All other courses may be completed with a grade of C- or better, or Pass.
Note - Grade requirements may differ by transfer institution. Work with your academic advisor.
4. Maximum 16 credits P may be used toward degree. This limit does not include courses only offered P/NP.
5. Cumulative GPA must be at least 2.0 at the time the degree is awarded.

Program Requirements

Core Transfer Map Requirements (31 credits)

Must be completed with a letter grade of C- or better, or Pass.

These meet Core Transfer Map (CTM) requirements. To earn this notation on a transcript, students must complete a minimum of 30 credits from this area.

Writing (4 credits)

- WR 121 - Academic Composition 4 Credit(s) or WR 121_H

Mathematics (4 credits)

- Fulfilled by MTH 211 found in the Major Requirements section

Arts & Letters (7 credits)

- Choose ONE of the following courses:
 - ART 115 - Basic Design: Fundamentals 3 Credit(s)
 - ART 131 - Introduction to Drawing 3 Credit(s)
- Choose ONE of the following courses:
 - ENG 104 - Introduction to Literature: Fiction 4 Credit(s) / ENG 104_H
 - ENG 105 - Introduction to Literature: Drama 4 Credit(s) / ENG 105_H
 - ENG 106 - Introduction to Literature: Poetry 4 Credit(s) / ENG 106_H

Social Science (8 credits)

- Choose ONE of the following courses:
 - HST 201 - History of the United States 4 Credit(s)
 - HST 202 - History of the United States 4 Credit(s)
 - HST 203 - History of the United States 4 Credit(s)
- Choose ONE of the following courses:
 - GEOG 201 - World Regional Geography 4 Credit(s)
 - ANTH 103 - Cultural Anthropology 4 Credit(s)

Natural Sciences (8 credits)

- Choose ONE Biology with lab (BI) course from the Science/Math/Computer Science list
- Choose ONE Geology with lab (G) course from the Science/Math/Computer Science list

Cultural Literacy Requirement

- Fulfilled by any of the following: HST 201, HST 202, HST 203, GEOG 201, or ANTH 103

Additional General Education (25-26 credits)

Must be completed with a letter grade of C- or better, or Pass.

- WR 122 - Argument, Research and Multimodal Composition 4 Credit(s) / WR 122_H
 - Note - The AAOT requires a minimum of 8 credits in WR. If transferring in less, complete WR 123, WR 227, or WR 227_H.
- COMM 111 - Fundamentals of Public Speaking 4 Credit(s) / COMM 111_H
- Choose a minimum of 3 credits from the following Health/Wellness/Fitness list
- Choose ONE course from the following Arts and Letters list
- Choose ONE lab science course from the Science/Math/Computer Science list
- Choose ONE of the following Social Science courses:
 - PS 201 - U.S. Government and Politics 3 Credit(s)
 - PS 202 - U.S. Government and Politics 3 Credit(s)
- Choose ONE of the following Social Science courses:
 - PSY 201 - General Psychology 4 Credit(s) / PSY 201_H
 - PSY 202 - General Psychology 4 Credit(s)

Major Requirements (23 credits)

Must be completed with a letter grade of C- or better. Pass not accepted.

Mathematics (12 credits - 4 credits will be applied to Core Transfer Map requirements)

- MTH 211 - Fundamentals of Elementary Mathematics 1 4 Credit(s)
- MTH 212 - Fundamentals of Elementary Mathematics 2 4 Credit(s)
- MTH 213 - Fundamentals of Elementary Mathematics 3 4 Credit(s)

Elementary Education (15 credits)

- ED 100 - Introduction to Education 3 Credit(s) or ED 216 - Foundations of Education 3 Credit(s)
- ED 233 - Adolescent Learning and Development 3 Credit(s)
- ED 258 - Multicultural Education 3 Credit(s)
- ED 269 - Inclusion and Special Needs 3 Credit(s)
- ED 280 - Co-op Ed: Education 3-12 Credit(s) (complete a minimum of 3 credits)

Electives

Must be completed with a letter grade of C- or better, or Pass.

Any college-level courses that bring total credits to 90 credits, with the following limitations:

- Up to 12 credits of Career Technical Education. See the list of Course Types by Prefix. Policies on accepting career-technical credits vary at four-year institutions in Oregon. Consult an academic advisor about taking these courses within the degree.
- Up to 18 credits of Cooperative Education may be included as electives. Cooperative Education courses identified as Career Technical Education courses count toward the 12-credit maximum for Career Technical Education.
- Up to 12 credits of Individual Music Lessons (MUP).
- Maximum 12 credits of activity courses (PE, PEAT, PEO, D) may be included within the entire degree, with the exception of D 160, 251, 256, and 260.
- Transfer institution requirements. Consult Lane's Academic Advising department for a list of recommended coursework. Transfer institution requirements may change without notice.

Recommended electives by transfer institution:

- Please connect with your desired transfer institution to determine any additional requirements and/or recommended electives (such as ECE, HDFS, ES, and Children's Lit) that can be completed at the community college.

Notes

- This program follows Associate of Arts Oregon Transfer (AAOT) Requirements unless otherwise specified.
- MTH 211-213 are only offered once a year - starting in the fall. Work with an academic advisor to make sure you are ready to start the series in the fall.
- Students must complete all required courses to earn this degree. Equivalent courses of 3 credits or higher may be transferred in and used to meet core or major requirements. To earn a Core Transfer Map (CTM) transcript notation, students must complete required courses and have a minimum of 30 CTM credits.
- College-level courses are numbered 100 or higher. Courses numbered 001-099 identify developmental courses (e.g. RD 090), with the exception of ENG 110, 116, 117; MTH 100, RD 115, WR 110, 120, and WR 115 (taken before summer 1999), which are also considered developmental.
- Foundational Skills are open to demonstration of proficiency. For information on waiver testing or credit for prior learning, contact an academic advisor. Waiver testing is not the same as placement testing.
- 200-level second language courses count toward the Arts and Letters requirement. American Sign Language (ASL) is considered a second language.
- University second language admission requirements for transfer students graduating high school 1997 or later include one of the following:
 - Two terms of the same college-level second language with an average grade of C- or above
 - Two years of the same high school-level second language with an average grade of C- or above
 - Satisfactory performance on an approved second language assessment of proficiency
 - Demonstrated proficiency in American Sign Language meets second language admission requirements
- Credit-by-Exam and Credit-by-Assessment may comprise no more than 25% of total degree credits.
- Only the Academic Requirements Review Committee (ARRC) may waive a college-related instruction requirement. Petitions are available from Enrollment Services at <https://www.lanecc.edu/administration/enrollment-services/general-education-substitution-and-waiver-petition>.
- Repeatable courses may be used once to meet a Discipline Studies requirement. Any additional allowable repeats may be used to meet Elective requirements.
- Some courses are included on more than one Discipline Studies list. These courses may be used only once to meet a specific Discipline Studies requirement. Please contact your academic advisor for details.
- Lower-division college-level courses taken at Lane will not always meet the same requirements an upper-division college-level course with similar content does at a four-year transfer institution. In such cases, the course(s) in question will generally transfer as an elective. Please contact specific four-year schools for details.
- General Information on transferring credits in from a prior institution: <https://www.lanecc.edu/costs-admission/transferring-prior-college-credit-lane>
- Courses numbered 197, 198, 199, 280, 297, 298, or 299 count as electives and do not meet Foundational Skills or Discipline Studies requirements. Courses numbered 199 and 299 are experimental and may later be reviewed and approved to meet Discipline Studies requirements.
- Although the AAOT degree provides an excellent framework for many students pursuing a baccalaureate degree, it is not ideal for all students. Students should consult with an academic advisor.
- HE 252 can be used in the Health/Wellness/Fitness category if taken in Summer 1997 or after. Prior to this, HE 252 would be considered an elective.

Associate of Science Oregon Transfer (ASOT)

Business, ASOT

The Associate of Science Oregon Transfer in Business (ASOT- Business) degree has business-focused lower-division general education requirements accepted by public universities in Oregon, and electives tailored for requirements at each intended transfer institution. Students transferring with this degree will have junior standing for registration purposes.

The ASOT-Business degree does not guarantee admission to Oregon universities, admission to a competitive business major, or junior standing in a major. Course, class standing, or GPA requirements for specific majors, departments, or schools are not necessarily satisfied by an ASOT-Business degree.

Each student is strongly encouraged to work with an academic advisor to select degree requirement courses that align with requirements at an intended transfer institution. Requirements at institutions vary, and elective choices differ depending on the intended transfer institution. Each student must contact the specific business school/program early in the first year of an ASOT-Business degree to be advised about additional requirements and procedures for admission consideration to the transfer institution and the Business school/program.

For current Lane courses that meet ASOT Foundational and Discipline requirements, see: Approved Discipline Studies Courses for Associate Degrees and Oregon Transfer Module

Estimated Cost: \$15,408

- Resident Tuition: \$11,925*
- Technology Fees: \$1,170
- General Student Fees: \$813**
- Online Course Fees: *** (if applicable)
- Books / Course Materials: \$1,500****

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanec.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

General Education degrees costs are based on 90 credits and 6 terms

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

***Online Course Fees: \$10.00 per course, maximum of \$50.00 per course

****Books and materials will vary by class. Please refer to your program or course for specific information on book and material charges. Open Educational Resources (OER) may be available to take the place of more expensive textbooks, reducing the overall cost of taking the class. For more information on classes using free and low-cost materials, visit <https://inside.lanec.edu/oer> or email oer@lanec.edu

Learning Outcomes

This degree is aligned with Lane's Institutional Learning Outcomes and the State General Education Learning Outcomes.

Guidelines

1. Complete a total of 90 credits of college-level coursework (see notes).
2. Complete at least 24 credits at Lane.
3. Foundational Skills and Discipline Studies courses must be a minimum of 3 credits.
4. All Elective courses may be any number of credits.
5. All courses must be completed with a grade of C- or better, or Pass.
6. Maximum 16 credits Pass may be used toward degree. This limit does not include courses only offered P/NP.
7. Cumulative GPA must be at least 2.0 at the time the Associate of Science Oregon Transfer: Business degree is awarded.

Note: Many Business programs have competitive admission. Minimum GPA and grades will not generally be high enough to gain admission to competitive programs.

Foundational Skills

Writing

A student must have eight credits of Writing. Writing meets the Information Literacy requirement.

If all writing courses are 4 or more credits, complete Option 1:

Option 1 - Two courses (8 credits):

- 1) WR 121_H / WR 121 - Academic Composition 4 Credit(s)
- 2) And complete **one** of the following:
WR 122_H / WR 122 - Argument, Research and Multimodal Composition 4 Credit(s) or
WR 227_H / WR 227 - Technical Writing 4 Credit(s)

If any writing course is 3 credits, complete Option 2:

Option 2 - Three courses (9-11 credits):

- 1) WR 121_H / WR 121 - Academic Composition 4 Credit(s) and
- 2) WR 122_H / WR 122 - Argument, Research and Multimodal Composition 4 Credit(s)
- 3) And complete **one** of the following:
WR 123 - Composition: Research Writing 4 Credit(s) or
WR 227 / WR 227 - Technical Writing 4 Credit(s)

Oral Communications

Complete one course from the Oral Communication list.

Mathematics

Complete three courses in college-level mathematics:

- MTH 243 - Introduction to Probability and Statistics 4 Credit(s) (required)
- And any two additional courses from the following:
 - MTH 105 - Math in Society 4 Credit(s)
 - MTH 106 - Math in Society 2 4 Credit(s)
 - MTH 107 - Math in Society 3 4 Credit(s)
 - MTH 111 - College Algebra 5 Credit(s)
 - MTH 112 - Trigonometry 5 Credit(s)
 - Any 200-level mathematics course

Note: Students who intend to transfer to Oregon State University should work with an academic advisor prior to taking MTH 243. OSU requires business-specific statistics, and academic advisors can help with reverse transfer.

Computer Applications

Complete one computer applications course from the following:

- CIS 101 - Computer Fundamentals
- CS 120 - Concepts of Computing: Information Processing.

Note: Students who intend to transfer to Oregon State University should take CIS 101 - Computer Fundamentals. OSU accepts Lane's CIS 101 + BA 101 as equivalent to OSU's BA 101 Business Now course. CIS 101 counts toward the 12 credit limit for career-technical education (CTE) courses. See Course Types by Prefix for information about CTE course prefixes. Please contact your academic advisor for details.

Discipline Studies

Cultural Literacy

Complete one course from any discipline studies courses designated as meeting the statewide criteria for Cultural Literacy. Courses approved for the Cultural Literacy requirement are marked with ^{CL} in the lists of courses on the Approved Discipline Studies Courses for Associate Degrees and Oregon Transfer Module. The credits for Cultural Literacy courses will only be counted once toward the 90 credits required to complete the degree.

Arts and Letters

Complete three courses from two or more disciplines from the Arts and Letters list.

Social Sciences

Complete four courses from two or more disciplines from the Social Science list.

- ECON 201 - Principles of Economics: Introduction to Microeconomics 3 Credit(s) (required)
- ECON 202 - Principles of Economics: Introduction to Macroeconomics 3 Credit(s) (required)
- And any two additional courses from the Social Science list.

Science/Math/Computer Science

Complete four courses from two or more disciplines, including at least three laboratory courses in Biological and/or Physical science, from the Science/Math/Computer Science list.

Notes:

-Biology: 100-level Biology courses are not repeatable. Students may only use one BI 101, one BI 102, and one BI 103 to meet requirements for any Lane degree, regardless of letter option. BI 213B - Principles of Botany and BI 213Z - Principles of Zoology are considered repeats at some four-year universities. Students will only receive credit for one course. Please contact your academic advising team for details.

-Chemistry: General Chemistry and Organic Chemistry series have separate lab courses. It is highly recommended students take lecture and lab courses together. To complete an ASOT Lab Science requirement, both lecture and lab courses must be completed.

-Computer programming: Students who complete more than one CS 161 or CS 162 programming language course should be aware that transfer institutions may count multiple 161 or 162 courses as repeats, **and may not accept them in transfer**. Students wishing to complete multiple programming courses should first take a CS 161/162 series and then enroll in CS 133/233 course series for any subsequent programming languages.

Business Specific Requirements

Complete five Business courses (20 credits) from the following:

- BA 101 - Introduction to Business 4 Credit(s) (required)
- BA 211 - Financial Accounting 4 Credit(s) (required)
- BA 213 - Managerial Accounting 4 Credit(s) (required)
- And two additional courses from the following:
 - BA 206 - Management Fundamentals 4 Credit(s)
 - BA 214 - Business Communications 4 Credit(s)
 - BA 223 - Marketing 4 Credit(s)
 - BA 224 - Human Resource Management 4 Credit(s)
 - BA 226 - Business Law 4 Credit(s)
 - BA 250 - Small Business Management 4 Credit(s)
 - BA 278 - Leadership and Team Dynamics 4 Credit(s)
 - BA 280 - Co-op Ed: Business Management 3-12 Credit(s)
 - BA 281 - Personal Finance 4 Credit(s)
 - Additional courses considered on a case-by-case basis. Contact the Business Department for details.

Electives

Any college-level courses that bring total credits to 90 credits including:

- Up to 12 credits of Career Technical Education. See the list of Course Types by Prefix. Policies on accepting career technical credits vary at four-year institutions in Oregon. Consult an academic advisor about taking these courses within the degree.
- Up to 18 credits of Cooperative Education may be included as electives. Cooperative Education courses identified as Career Technical Education courses count toward the 12-credit maximum for Career Technical Education.
- Up to 12 credits of Individual Music Lessons (MUP).
- 12 credits of activity courses (PE, PEAT, PEO, D) may be included within the entire degree, with the exception of D 160, 251, 256, and 260.
- Transfer institution requirements. Consult Lane's Academic Advising department for a list of recommended coursework. Transfer institution requirements may change without notice.

Notes

1. College-level courses are numbered 100 or higher. Courses numbered 001-099 identify developmental courses (e.g. RD 090), with the exception of ENG 110, 116, 117; MTH 100, RD 115, WR 110, 120 and WR 115 (taken before summer 1999), which are also considered developmental.
2. Foundational Skills are open to demonstration of proficiency. For information on waiver testing or credit for prior learning, contact an academic advisor. Waiver testing is not the same as placement testing.
3. 200-level second language courses count toward the Arts and Letters requirement. American Sign Language (ASL) is considered a second language.

4. University second language admission requirements for transfer students graduating high school 1997 or later include one of the following:
 - Two terms of the same college-level second language with an average grade of C- or above.
 - Two years of the same high school-level second language with an average grade of C- or above.
 - Satisfactory performance on an approved second language assessment of proficiency.
 - Demonstrated proficiency in American Sign Language meets second language admission requirements.
5. Credit-by-Exam and Credit-by-Assessment may comprise no more than 25% of total degree credits.
6. Only the Academic Requirements Review Committee (ARRC) may waive a college-related instruction requirement. Petitions are available from Enrollment Services at <https://www.lanec.edu/administration/enrollment-services/general-education-substitution-and-waiver-petition>.
7. Repeatable courses may be used once to meet a Discipline Studies requirement. Any additional allowable repeats may be used to meet Elective requirements.
8. Some courses are included on more than one Discipline Studies list. These courses may be used only once to meet a specific Discipline Studies requirement. Please contact your academic advisor for details.
9. Lower-division college-level courses taken at Lane will not always meet the same requirements an upper-division college-level course with similar content does at a four-year transfer institution. In such cases, the course(s) in question will generally transfer as an elective. Please contact specific four-year schools for details.
10. General Information on transferring in credits from a prior institution: <https://www.lanec.edu/costs-admission/transferring-prior-college-credit-lane>.
11. Courses numbered 197, 198, 199, 280, 297, 298, or 299 count as electives and do not meet Foundational Skills or Discipline Studies requirements. Courses numbered 199 and 299 are experimental and may later be reviewed and approved to meet Discipline Studies requirements.
12. Although the ASOT-Business degree provides an excellent framework for many students pursuing a baccalaureate degree in business, it is not ideal for all students. Students should consult with an academic advisor.

Computer Science, ASOT

The Associate of Science Oregon Transfer in Computer Science (ASOT-CS) degree has computer science-focused lower division general education requirements accepted by public universities in Oregon, and electives tailored for requirements at each intended transfer institution. Students transferring with this degree will have junior standing for registration purposes only. The ASOT-CS degree does not guarantee admission to Oregon universities, admission to a competitive computer science major, or junior standing in a major. Course, class standing, or GPA requirements for specific majors, departments, or schools are not necessarily satisfied by an ASOT-CS degree. Each student is strongly encouraged to work with an academic advisor to select degree requirement courses that align with requirements at an intended transfer institution. Requirements at institutions vary, and elective choices differ depending on the intended transfer institution. Each student must contact the specific computer science school/program early in the first year of an ASOT-CS degree to be advised about additional requirements and procedures for admission consideration to the transfer institution and the school/program. For current Lane courses that meet ASOT Foundational and Discipline requirements, see: Approved Discipline Studies Courses for Associate Degrees and Oregon Transfer Module

Estimated Cost: \$15,408

- Resident Tuition: \$11,925*
- Technology Fees: \$1,170
- General Student Fees: \$813**
- Online Course Fees: (if applicable)***

- Books / Course Materials: \$1,500****

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

General Education degrees costs are based on 90 credits and 6 terms

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

***Online Course Fees: \$10.00 per course, maximum of \$50.00 per course

****Books and materials will vary by class. Please refer to your program or course for specific information on book and material charges. Open Educational Resources (OER) may be available to take the place of more expensive textbooks, reducing the overall cost of taking the class. For more information on classes using free and low-cost materials, visit <https://inside.lanecc.edu/oer> or email oer@lanecc.edu

Learning Outcomes

This degree is aligned with Lane's Institutional Learning Outcomes and the State General Education Learning Outcomes.

Guidelines

1. Complete a total of 90 credits of college-level coursework (see notes).
2. Complete at least 24 credits at Lane.
3. Foundational Skills and Discipline Studies courses must be a minimum of 3 credits, except for Health/Wellness/Fitness courses, which may be any number of credits.
4. All Elective courses may be any number of credits.
5. Computer Science Specific requirements (see below) must be completed with a letter grade of C or better. P/NP is not accepted. All other courses must be completed with a grade of C- or better, or Pass.
6. Maximum 16 credits Pass may be used toward degree. This limit does not include courses only offered P/NP.
7. Cumulative GPA must be at least 2.0 at the time the Associate of Science Oregon Transfer: Computer Science degree is awarded.

Note: Many Computer Science programs have competitive admission. Minimum GPA and grades will not generally be high enough to gain admission to competitive programs.

Foundational Skills

Writing

A student must have eight credits of Writing. Writing meets the Information Literacy requirement.

If all writing courses are 4 or more credits, complete Option 1:

Option 1 - Two courses (8 credits):

- 1) WR 121_H / WR 121 - Academic Composition 4 Credit(s)
- 2) And complete **one** of the following:
 - WR 122_H / WR 122 - Argument, Research and Multimodal Composition 4 Credit(s) or
 - WR 227_H / WR 227 - Technical Writing 4 Credit(s)

If any writing course is 3 credits, complete Option 2:

Option 2 - Three courses (9-11 credits):

- 1) WR 121_H / WR 121 - Academic Composition 4 Credit(s) and
- 2) WR 122_H / WR 122 - Argument, Research and Multimodal Composition 4 Credit(s)
- 3) And complete **one** of the following:
 - WR 123 - Composition: Research Writing 4 Credit(s) or
 - WR 227_H / WR 227 - Technical Writing 4 Credit(s)

Note: WR 227 will meet additional requirements for some Computer Science baccalaureate programs. Contact your academic advisor for details.

Oral Communication

Complete one course from the Oral Communication list.

Mathematics

Complete the following two math courses:

- MTH 251 - Calculus 1 (Differential Calculus) 5 Credit(s)
- MTH 252 - Calculus 2 (Integral Calculus) 5 Credit(s)

Health/Wellness/Fitness

Complete one or more courses, totaling at least three credits, from the Health/Wellness/Fitness list.

Discipline Studies

Cultural Literacy

Complete one course from any discipline studies courses designated as meeting the statewide criteria for Cultural Literacy. Courses approved for the Cultural Literacy requirement are marked with ^{CL} in the lists of courses on the Approved Discipline Studies Courses for Associate Degrees and Oregon Transfer Module. The credits for Cultural Literacy courses will only be counted once toward the 90 credits required to complete the degree.

Arts and Letters

Complete three courses from two or more disciplines from the Arts and Letters list.

Social Sciences

Complete four courses from two or more disciplines from the Social Science list.

Science/Math/Computer Science

Complete four courses from two or more disciplines, including at least three laboratory courses in Biological and/or Physical science, from the Science/Math/Computer Science list.

Notes:

-Biology: 100-level Biology courses are not repeatable. Students may only use one BI 101, one BI 102, and one BI 103 to meet requirements for any Lane degree, regardless of letter option. BI 213B - Principles of Botany and BI 213Z - Principles of Zoology are considered repeats at some four-year universities. Students will only receive credit for one course. Please contact your academic advising team for details.

-Chemistry: General Chemistry and Organic Chemistry series have separate lab courses. It is highly recommended students take lecture and lab courses together. To complete an ASOT Lab Science requirement, both lecture and lab courses must be completed.

-Computer Programming: Students who complete more than one CS 161 or CS 162 programming language course should be aware that transfer institutions may count multiple 161 or 162 courses as repeats, **and may not accept them in transfer**. Students wishing to complete multiple programming courses should first take a CS 161/162 series and then enroll in CS 133/233 course series for any subsequent programming languages.

-Physics: Some computer science baccalaureate programs require physics. Students planning to transfer should contact their academic advisor for help determining the appropriate physics sequence.

Computer Science Specific Requirements

Complete the following four Computer Science courses (16 credits). Computer Science requirements must be completed with a letter grade of C or better. P/NP is not accepted.

- CS 160 - Orientation to Computer Science 4 Credit(s)
- CS 161 - Computer Science 1 4 Credit(s) (CS 161C or CS 161N or CS 161P)
- CS 162 - Computer Science 2 4 Credit(s) (CS 162C or CS 162N or CS 162P)
- CS 260 - Data Structures 1 4 Credit(s)

Note: Lane offers Computer Science 1 and 2 in the following programming languages: C++, .NET, and Python. Some computer science baccalaureate programs require specific programming courses. Students planning to transfer should contact their academic advisor for help determining the appropriate computer science programming sequence.

Electives

Any college-level courses that bring total credits to 90 credits including:

- Up to 12 credits of Career Technical Education. See the list of Course Types by Prefix. Policies on accepting career technical credits vary at four-year institutions in Oregon. Consult an academic advisor about taking these courses within the degree.
- Up to 18 credits of Cooperative Education may be included as electives. Cooperative Education courses identified as Career Technical Education courses count toward the 12-credit maximum for Career Technical Education.
- Up to 12 credits of Individual Music Lessons (MUP).

- 12 credits of activity courses (PE, PEAT, PEO, D) may be included within the entire degree, with the exception of D 160, 251, 256, & 260
- Transfer institution requirements. Consult Lane's Academic Advising department for a list of recommended coursework. Transfer institution requirements may change without notice.

Notes

1. College-level courses are numbered 100 or higher. Courses numbered 001-099 identify developmental courses (e.g. RD 090), with the exception of ENG 110, 116, 117; MTH 100, RD 115, WR 110, 120 and WR 115 (taken before summer 1999), which are also considered developmental.
2. Foundational Skills are open to demonstration of proficiency. For information on waiver testing or credit for prior learning, contact an academic advisor. Waiver testing is not the same as placement testing.
3. 200-level second language courses count toward the Arts and Letters requirement. American Sign Language (ASL) is considered a second language.
4. University second language admission requirements for transfer students graduating high school 1997 or later include one of the following:
 - Two terms of the same college-level second language with an average grade of C- or above.
 - Two years of the same high school-level second language with an average grade of C- or above.
 - Satisfactory performance on an approved second language assessment of proficiency.
 - Demonstrated proficiency in American Sign Language meets second language admission requirements.
5. Credit-by-Exam and Credit-by-Assessment may comprise no more than 25% of total degree credits.
6. Only the Academic Requirements Review Committee (ARRC) may waive a college-related instruction requirement. Petitions are available from Enrollment Services at <https://www.lanec.edu/administration/enrollment-services/general-education-substitution-and-waiver-petition>.
7. Repeatable courses may be used once to meet a Discipline Studies requirement. Any additional allowable repeats may be used to meet Elective requirements.
8. Some courses are included on more than one Discipline Studies list. These courses may be used only once to meet a specific Discipline Studies requirement. Please contact your academic advisor for details.
9. Lower-division college-level courses taken at Lane will not always meet the same requirements an upper-division college-level course with similar content does at a four-year transfer institution. In such cases, the course(s) in question will generally transfer as an elective. Please contact specific four-year schools for details.
10. General Information on transferring in credits from a prior institution: <https://www.lanec.edu/costs-admission/transferring-prior-college-credit-lane>.
11. Courses numbered 197, 198, 199, 280, 297, 298, or 299 count as electives and do not meet Foundational Skills or Discipline Studies requirements. Courses numbered 199 and 299 are experimental and may later be reviewed and approved to meet Discipline Studies requirements.
12. Although the ASOT-Computer Science degree provides an excellent framework for many students pursuing a baccalaureate degree in computer science, it is not ideal for all students. Students should consult with a computer science academic advisor.
13. HE 252 can be used in the Health/Wellness/Fitness category if taken in Summer 1997 or after. Prior to this, HE 252 would be considered an elective.

Associate of Arts (AAT) / Associate of Science (AST)

AAT/AST Degree Requirements

The Associate of Arts Transfer (AAT) and Associate of Science Transfer (AST) degrees were created to meet the requirements of House Bill 2998 to prepare students for transfer to a public university in Oregon and have junior standing in a specific Bachelor of Arts or Bachelor of Science degree program.

Learning Outcomes

Lane degrees and certificates are aligned with Lane's Institutional Learning Outcomes. Associate of Applied Science degrees also have program-specific learning outcomes. See individual programs for details.

Program Requirements

Either of these degrees will be awarded based on the following criteria. Students also meet any major-specific criteria for degree completion.

- Complete a minimum of 90 credits to be awarded the Associate of Arts or Associate of Science Transfer degree. The requirements of the specific award may not exceed 108 quarter credits.
- Complete a minimum of 24 credits at Lane.
- All courses must be passed with a grade of "C-" or better.
- Maximum 16 credits "Pass" may be used towards the degree. This limit does not include courses only offered P/NP.
- Students must have a minimum cumulative GPA of 2.00 at the time the AST or AAT is awarded.
- All courses should be aligned with the student's intended program of study and the degree requirements of the baccalaureate institution to which the student plans to transfer. A student is encouraged to work with an advisor in the selection of courses.
- The Associate of Arts and Associate of Science Transfer degrees include 8 courses/minimum 30 credits of embedded coursework called the Core Transfer Map (CTM). Unless noted otherwise in the specific Major Requirements Module for an individual AST or AAT award, courses used to satisfy CTM requirements may also be used to satisfy major requirements.
- Each Associate of Arts and Associate of Science Transfer degree must include a Major Requirements Module. The specific courses and categories required for this module are determined by the Major-specific Memoranda of Understanding. All individual courses required in the Major Requirements Module will apply to major, general education, and/or degree requirements at each of the Oregon public universities.

Core Transfer Map Requirements

1. All CTM courses must be a minimum of 3 credits.
2. The CTM includes 6 specific course categories, and students must complete at least 8 courses across those 6 categories; the CTM must also total a minimum of 30 credits. If the completion of the 8 required courses does not total 30 credits, any additional course designated as meeting the statewide criteria for Arts and Letters, Social Sciences, or Math/Science/Computer Science may be used to bring the total to 30 credits.
3. A completed CTM will apply to at least 30 credits of general education requirements for a bachelor's degree at any Oregon public university.
4. Individual AST or AAT majors may designate that specific courses must be taken to fulfill the CTM requirements for that major, as outlined in the major-specific requirements in the specific MTM MOU.

Courses that meet Core Transfer Map (CTM) requirements. To earn this notation on a transcript, students must meet all of these requirements with a minimum of 30 credits

Writing (4 credits)

- WR 121 - Academic Composition 4 Credit(s) or WR 121_H

Mathematics (4-5 credits)

- Choose ONE course (100-level or higher) in mathematics

Arts & Letters (6-8 credits)

- Choose TWO courses from the Arts and Letters list
- Social Science (6-8 credits)**

- Choose TWO courses from the Social Science list

Natural Sciences (8 credits)

- Choose TWO lab courses from the Science/Math/Computer Science list

Cultural Literacy Requirement

- At least 1 Core Transfer requirement listed above must also be an approved Cultural Literacy course. Courses designated as meeting Cultural Literacy are marked with ^{CL} on the lists of Approved Discipline Studies Courses for Associate Degrees and Oregon Transfer Module

Major Requirements

1. Students must complete the specific requirements appropriate to the individual designated AST or AAT major, as outlined in the Major Requirements Module in this Handbook.
2. Individual AST or AAT majors may designate that specific courses must be taken to fulfill the CTM requirements for that major, as outlined in the Major Requirements Module in this Handbook.
3. All specific courses designated in the Major Requirements Module for an individual AST or AAT will be transferable and apply to requirements in the major at any Oregon public university, except as noted in the "Notes and Clarifications" for the Major Requirements Module.

Electives

1. Any college-level course designated by the college as acceptable.
2. Up to 12 credits of Career Technical Education. See the list of Course Types by Prefix. Policies on accepting career technical credits vary at four-year institutions in Oregon. Consult an academic advisor about taking these courses within the degree.
3. Individual AST or AAT majors may recommend specific elective courses and/or indicate where specific elective courses may be required by individual public universities in Oregon.

Notes

1. Community colleges may not add graduation requirements at the local level. The total credits should not exceed the number required to meet these course requirements within the college's credits structure.
2. Writing courses must meet the specific course outcomes as identified by Oregon Writing and English Advisory Council. In addition, the group of courses that is sufficient for meeting this requirement must, together, provide all of the content recommended by the Oregon Writing and English Advisory Committee (OWEAC), including a research component. Further information can be found at oweac.wordpress.com.
3. Required courses are indicated using descriptors; where a specific course number is used by a plurality of colleges and universities, that number is indicated in parentheses.
4. Although they are important in terms of preparation, courses that are developmental in nature are designed to prepare students for college-level work and are not counted in the 90 quarter hours required for the AAT or AST. However, it is recommended that students and advisors note that grades earned in developmental courses will likely count in the cumulative grade point average (GPA) at the community college. It is also advised to work early with the receiving 4-year institutions and determine what policy/practice is in place in calculating cumulative GPA upon transfer (since developmental courses will not transfer).
5. The CTM requirements represent minimal skill competencies. As such, they may be open to a demonstration of competency. Each community college is encouraged to establish how students may demonstrate competency in lieu of completing the course(s).
6. All CTM courses must meet the statewide outcomes and criteria for the specific area. Each college designates which of its courses it has approved as meeting the criteria for each of these specific areas in its catalog.
7. The second year of a foreign language, but not the first year, may be included among courses that count toward the Arts and Letters requirement. American Sign Language (ASL) is considered a foreign language.

8. University second language admission requirements for transfer students graduating high school 1997 or later include one of the following:
 - Two terms of the same college-level second language with an average grade of C- or above.
 - Two years of the same high school-level second language with an average grade of C- or above.
 - Satisfactory performance on an approved second language assessment of proficiency.
 - Demonstrated proficiency in American Sign Language meets second language admission requirements.
9. WR 115 may be included in the AAT or AST degree as an elective providing that the WR 115 course at the community college has been approved by the Office of Community Colleges and Workforce Development as meeting statewide learning outcomes for the course.
10. The AAT and AST integrate the Core Transfer Map (CTM), a module that fulfills 8 courses/minimum 30 credits of General Education requirements for the baccalaureate degree at all Oregon public universities.
11. The AAT and AST do not necessarily meet **all** of the lower-division major, general education, or degree requirements that each public university in Oregon may have. Students may need to take additional introductory work to prepare for certain majors at certain universities and should check with an advisor regarding availability at their local community colleges.
12. **Lower-division college-level courses taken at Lane will not always meet the same requirements an upper-division college-level course with similar content does at a four-year transfer institution. In such cases, the course(s) in question will generally transfer as an elective. Please contact specific four-year schools for details.**
13. All courses must be passed with a C- or better. If a course is taken as a P/NP and the student receives a "Pass" ("P"), it is considered equivalent to a C- or better at all Oregon community colleges. However, it is recommended that students take courses for a letter grade and not P/NP; some individual AAT or AST majors may limit P/NP options for specific requirements, and such limits will be noted.
14. For purposes of the AAT and AST degree, no student with a disability shall be denied the degree or the benefits flowing therefrom with respect to admission and matriculation at a state university because the student has been granted an academic adjustment or program modification in any course required for the AAT degree. This provision includes course substitutions when granted as a disability accommodation in the manner prescribed by the student's community college. This provision may not necessarily apply to major-specific course requirements or prerequisites.
15. Oregon Community Colleges will consider a course substitution request on a case-by-case basis, based on the student's disability as determined by documentation as long as there is no substantial change to the course learning outcomes. Before considering a course substitution, assistive technology, tutoring, or other reasonable accommodations will be considered in an effort to enable the student to succeed in standard course work. However, nothing in these guidelines should be interpreted as requiring the student to attempt and fail a standard course, including one made more accessible through reasonable accommodation, before consideration will be given to a request for course substitution. A course substitution will not automatically be made simply because the student has documentation of a disability impacting a particular area of academics. Requesting a course substitution should follow the process listed below.
 - The student must request a disability-related course substitution through the designated Disability Services representative and provide appropriate documentation
 - The Disability Services Office will contact the vice president or college designee to determine whether the substitution course would result in a substantial change in the course learning outcomes
 - If the substitution would result in a substantial change in the course learning outcomes, the substitution will be denied

- If the substitution does not result in a substantial change in the course learning outcomes it will be approved
- 16. When students complete courses at more than one Oregon community college, the AAT- or AST- granting institution will apply courses that students transfer in from other Oregon community colleges to meet Core Transfer Map and Major requirements as intended and as identified by the approved course lists at the community college where and when they were taken. This is in recognition of the responsibility each college bears to create the lists based on the Outcomes and Criteria.
- 17. Repeatable courses may be used once to meet a Discipline Studies requirement. Any additional allowable repeats may be used to meet Elective requirements.
- 18. Some courses are included on more than one Discipline Studies list. These courses may be used only once to meet specific Discipline Studies requirements. Please contact your academic advisor for details.
- 19. Courses numbered 197, 198, 199, 280, 297, 298, or 299 count as electives and do not meet Core Transfer requirements. Courses numbered 199 and 299 are experimental and may later be reviewed and approved to meet Discipline Studies requirements. Students must also regularly meet with an advisor. Students are strongly encouraged to
 - Seek advising before registering for their first term of community college
 - Seek advising after they have completed the 27-35 credits of the Core Transfer Map
 - Seek advising and meet with a transfer coordinator before registration opens at the beginning of the student's second year in college. Students should also be aware that if they want to complete this Major Transfer Map in two years, they should take an average of 45 credits per year (average of 15 credits per quarter).
- 20. Only the Academic Requirements Review Committee (ARRC) may waive a college-related instruction requirement. Petitions are available from Enrollment Services at <https://www.lanecc.edu/administration/enrollment-services/general-education-substitution-and-waiver-petition>

Additional Notes

- Students must complete all required courses to earn this degree. Equivalent courses of 3 credits or higher may be transferred in and used to meet core or major requirements. To earn a Core Transfer Map (CTM) transcript notation, students must complete required courses and have a minimum of 30 CTM credits.
- College-level courses are numbered 100 or higher. Courses numbered 001-099 identify developmental courses (e.g. RD 090), with the exception of ENG 110, 116, 117; MTH 100, RD 115, WR 110, 120, and WR 115 (taken before summer 1999), which are also considered developmental.
- Credit-by-Exam and Credit-by-Assessment may comprise no more than 25% of total degree credits.

Biology, AST

This degree is dependent on students selecting and working with their transfer institution early in the program. Contact an academic advisor for help determining a degree plan.

Length: 90 credits

Program Contacts

- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu
- Note - Students are strongly encouraged to work with an academic advisor to match career and major goals with an appropriate program and to select appropriate courses for a major at an intended transfer institution

Estimated Cost: \$15,408

- Resident Tuition: \$11,925*
- Technology Fees: \$1,170
- General Student Fees: \$813**
- Online Course Fees: *** (if applicable)
- Books / Course Materials: \$1,500****

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

General Education degree costs are based on 90 credits and 6 terms.

*Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

***Online Course fees: \$10.00 per course, maximum of \$50.00 per course

****Books and materials will vary by class. Please refer to your program or course for specific information on book and material charges. Open Educational Resources (OER) may be available to take the place of more expensive textbooks, reducing the overall cost of taking the class. For more information on classes using free and low-cost materials, visit <https://inside.lanecc.edu/oer> or email oer@lanecc.edu

Program Learning Outcomes

This program outlines specific course requirements for students who plan to transfer to a four-year public university in Oregon and earn a Bachelor of Science in Biology. Students should work with an academic advisor to ensure they fulfill the requirements for this program and for their intended transfer institution. Students seeking alternative accepted pathways should consult with an academic advisor. Lane degrees and certificates are aligned with Lane's Institutional Learning Outcomes and Oregon learning outcomes. View our State General Education Learning Outcomes.

Guidelines

1. Complete a total of 90 credits of college-level coursework (24 credits must be completed at LCC).
2. General Education courses must be a minimum of 3 credits. Elective courses may be any number of credits.
3. Biology Major requirements must be completed with a grade of C- or better. P/NP is not accepted. All other courses may be completed with a grade of C- or better, or Pass.
Note - Grade requirements may differ by transfer institution. Work with your academic advisor.
4. Maximum 16 credits P may be used toward degree. This limit does not include courses only offered P/NP.
5. Cumulative GPA must be at least 2.0 at the time the degree is awarded

Program Requirements

Core Transfer Map Requirements (29-33 credits)

Must be completed with a letter grade of C- or better, or Pass.

These meet Core Transfer Map (CTM) requirements. To earn this notation on a transcript, students must meet these requirements along with a minimum of 30 credits.

Writing (4 credits)

- WR 121 - Academic Composition 4 Credit(s) or WR 121_H

Mathematics (5 credits)

- Fulfilled by MTH 251 found in the Major Requirements section

Arts & Letters (6-8 credits)

- Choose TWO courses from Arts and Letters list

Social Science (6-8 credits)

- Choose TWO courses from Social Science list

Natural Sciences (8 credits)

- Fulfilled by BI 211 and BI 212 found in the Major Requirements section

Cultural Literacy Requirement

- At least 1 general education requirement listed above must also be an approved Cultural Literacy course. Courses designated as meeting

Cultural Literacy are marked with ^{CL} on the lists of Approved Discipline Studies Courses for Associate Degrees and Oregon Transfer Module.

Additional General Education (4 credits)

Must be completed with a letter grade of C- or better, or Pass.

Writing (4 credits)

- Choose one: WR 122 - Argument, Research and Multimodal Composition 4 Credit(s) or WR 122_H or WR 227 or WR 227_H

Major Requirements (42-45 credits)

Must be completed with a letter grade of C- or better. Pass not accepted.

Calculus (12 credits - 5 of the 12 will be applied to Core Transfer Maps)

- MTH 251 - Calculus 1 (Differential Calculus) 5 Credit(s)
- MTH 252 - Calculus 2 (Integral Calculus) 5 Credit(s)

Biology (12 credits - 8 of the 12 will be applied to Core Transfer Maps)

Students must complete full biology series at the same institution

- BI 211 - Principles of Biology 4 Credit(s)
- BI 212 - Principles of Biology 4 Credit(s)
- Choose one: BI 213B - Principles of Botany 4 Credit(s) or BI 213Z - Principles of Zoology 4 Credit(s)

Chemistry (18 credits) - laboratory required

- CH 221 - General Chemistry 1 4 Credit(s) + CH 227 - General Chemistry Laboratory 1 2 Credit(s)
- CH 222 - General Chemistry 2 4 Credit(s) + CH 228 - General Chemistry Laboratory 2 2 Credit(s)
- CH 223 - General Chemistry 3 4 Credit(s) + CH 229 - General Chemistry Laboratory 3 2 Credit(s)

Pick ONE sequence from the following (15-18 credits)

- Organic Chemistry** - laboratory required
 - CH 241 - Organic Chemistry 4 Credit(s) + CH 247 - Organic Chemistry Laboratory 1 2 Credit(s)
 - CH 242 - Organic Chemistry 4 Credit(s) + CH 248 - Organic Chemistry Laboratory 2 2 Credit(s)
 - CH 243 - Organic Chemistry 4 Credit(s) + CH 249 - Organic Chemistry Laboratory 3 2 Credit(s)
- General Physics**
 - PH 201 - General Physics 5 Credit(s)
 - PH 202 - General Physics 5 Credit(s)
 - PH 203 - General Physics 5 Credit(s)
- Physics with Calculus**
 - PH 211 - General Physics with Calculus 5 Credit(s)
 - PH 212 - General Physics with Calculus 5 Credit(s)
 - PH 213 - General Physics with Calculus 5 Credit(s)

Electives

Must be completed with a letter grade of C- or better, or Pass

Any college-level courses that bring total credits to 90 credits, with the following limitations:

- Up to 12 credits of Career Technical Education. See the list of Course Types by Prefix. Policies on accepting career-technical credits vary at four-year institutions in Oregon. Consult an academic advisor about taking these courses as electives.
- Up to 18 credits of Cooperative Education may be included as electives. Cooperative Education courses identified as Career Technical Education courses count toward the 12-credit maximum for Career Technical Education.
- Up to 12 credits of Individual Music Lessons (MUP).
- Maximum 12 credits of activity courses (PE, PEAT, PEO, D) may be included within the entire degree, with the exception of D 160, 251, 256, and 260.
- Transfer institution requirements. Consult Lane's Academic Advising department for a list of recommended coursework. Transfer institution requirements may change without notice.

Recommended Electives by Institution

Oregon State University

- COMM 111

- HE 275
- Pick a 2nd sequence from Chemistry, or Physics (listed above).
- Additional General Education as needed by OSU. See list of LCC courses that transfer - General Education Course Equivalencies to OSU. Connect with OSU to determine exactly what to take.

University of Oregon

- Pick a 2nd sequence from Chemistry, or Physics (listed above).
- Additional General Education as needed by UO. See list of LCC courses that transfer - General Education Course Equivalencies to UO. Connect with UO to determine exactly what to take.

Portland State University

- Pick a 2nd sequence from Chemistry, or Physics (listed above).
- Additional General Education as needed by PSU. Connect with PSU to determine exactly what to take.

For all other Oregon universities, please connect with your desired transfer institution to determine any additional requirements that can be completed at the community college.

Notes

- This program follows Associate of Arts (AAT) / Associate of Science (AST) Requirements unless otherwise specified.
- Students must complete all required courses to earn this degree. Equivalent courses of 3 credits or higher may be transferred in and used to meet core or major requirements. To earn a Core Transfer Map (CTM) transcript notation, students must complete required courses and have a minimum of 30 CTM credits.
- Students considering pre-medical, pre-dental, and pre-pharmacy programs should consider the Organic Chemistry sequence. Courses in the sequence must be taken at the same institution.
- College-level courses are numbered 100 or higher. Courses numbered 001-099 identify developmental courses (e.g. RD 090), with the exception of ENG 110, 116, 117; MTH 100, RD 115, WR 110, 120, and WR 115 (taken before summer 1999), which are also considered developmental.
- University second language admission requirements for transfer students graduating high school 1997 or later include one of the following:
 - Two terms of the same college-level second language with an average grade of C- or above
 - Two years of the same high school-level second language with an average grade of C- or above
 - Satisfactory performance on an approved second language assessment of proficiency
 - Demonstrated proficiency in American Sign Language meets second language admission requirements
- Credit-by-Exam and Credit-by-Assessment may comprise no more than 25% of total degree credits.
- Only the Academic Requirements Review Committee (ARRC) may waive a college-related instruction requirement. Petitions are available from Enrollment Services at <https://www.lanecc.edu/administration/enrollment-services/general-education-substitution-and-waiver-petition>
- Repeatable courses may be used once to meet a Core Transfer Map requirement. Any additional allowable repeats may be used to meet Elective requirements.
- Some courses are included on more than one Core Transfer Map list. These courses may be used only once to meet a specific Core Transfer Map requirement. Please contact your academic advisor for details.
- Courses numbered 197, 198, 199, 280, 297, 298, or 299 count as electives and do not meet Core Transfer Map requirements. Courses numbered 199 and 299 are experimental and may later be reviewed and approved to meet Core Transfer Map requirements.

Business, AST

This degree is dependent on students selecting and working with their transfer institution early in the program. Contact an academic advisor for help determining a degree plan.

Length: 90 credits

Program Contacts

- Academic Advising: <https://www.lanec.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanec.edu
- Note - Students are strongly encouraged to work with an academic advisor to select courses and map a plan that matches career and transfer major goals

Estimated Cost: \$15,408

- Resident Tuition: \$11,925*
- Technology Fees: \$1,170
- General Student Fees: \$813**
- Online Course Fees: *** (if applicable)
- Books / Course Materials: \$1,500****

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanec.edu/costs-admission/tuition-fees-and-payments/credit-tuition>.

General Education degree costs are based on 90 credits and 6 terms

*Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

***Online Course fees: \$10.00 per course, maximum of \$50.00 per course

****Books and materials will vary by class. Please refer to your program or course for specific information on book and material charges. Open Educational Resources (OER) may be available to take the place of more expensive textbooks, reducing the overall cost of taking the class. For more information on classes using free and low-cost materials, visit <https://inside.lanec.edu/oer> or email oer@lanec.edu

Program Learning Outcomes

This program outlines specific course requirements for students who plan to transfer to a four-year public university in Oregon and earn a Bachelor of Science in Business. Students should work with an academic advisor to ensure they fulfill the requirements for this program and for their intended transfer institution. Students seeking alternative accepted pathways should consult with an academic advisor.

Students who complete this program will be able to:

PLO 1 - Explain basic business functions and their integration into the business environment

PLO 2 - Integrate diverse cultural perspectives and ethical reasoning and actions into business decisions

PLO 3 - Demonstrate effective oral and written communication skills

PLO 4 - Apply critical thinking and analytical reasoning skills to business decisions

Guidelines

1. Complete a total of 90 credits of college-level coursework (24 credits must be completed at LCC).
2. General Education courses must be a minimum of 3 credits. Elective courses may be any number of credits.
3. Business Major requirements must be completed with a grade of C- or better. P/NP is not accepted. All other courses may be completed with a grade of C- or better, or Pass.
Note - Grade requirements may differ by transfer institution. Work with your academic advisor.
4. Maximum 16 credits P may be used toward degree. This limit does not include courses only offered P/NP.
5. Cumulative GPA must be at least 2.0 at the time the degree is awarded

Program Requirements

Core Transfer Map Requirements (28-31 credits)

Must be completed with a letter grade of C- or better, or Pass.

These meet Core Transfer Map (CTM) requirements. To earn this notation on a transcript, students must meet these requirements along with a minimum of 30 credits.

Writing (4 credits)

- WR 121 - Academic Composition 4 Credit(s) or WR 121_H

Mathematics (4-5 credits) - Choose ONE:

- MTH 111 - College Algebra 5 Credit(s)
- MTH 241 - Elementary Calculus 1 4 Credit(s)

Arts & Letters (6-8 credits)

- Choose TWO courses from the Arts and Letters list

Social Science (6 credits)

- ECON 201 - Principles of Economics: Introduction to Microeconomics 3 Credit(s)
- ECON 202 - Principles of Economics: Introduction to Macroeconomics 3 Credit(s)

Natural Sciences (8 credits)

- Choose TWO lab science courses from the Science/Math/Computer Science list

Cultural Literacy Requirement

- At least 1 general education requirement listed above must also be an approved Cultural Literacy course. Courses designated as meeting Cultural Literacy are marked with ^{CL} on the lists of Approved Discipline Studies Courses for Associate Degrees and Oregon Transfer Module.

Major Requirements (32 credits)

Must be completed with a letter grade of C- or better. Pass not accepted.

General (8 credits)

- WR 227 - Technical Writing 4 Credit(s) / WR 227_H
- COMM 111 - Fundamentals of Public Speaking 4 Credit(s) / COMM 111_H

Math (4 credits) - Choose ONE:

Note - MTH 241 cannot count toward both Major and Core Transfer requirements

- MTH 241 - Elementary Calculus 1 4 Credit(s)
- MTH 243 - Introduction to Probability and Statistics 4 Credit(s)

Business (20 credits)

- BA 101 - Introduction to Business 4 Credit(s)
- BA 211 - Financial Accounting 4 Credit(s)
- BA 213 - Managerial Accounting 4 Credit(s)
- BA 226 - Business Law 4 Credit(s)
- BT 123 - MS EXCEL for Business 4 Credit(s)

Electives

Must be completed with a letter grade of C- or better, or Pass.

The following are prerequisites for some major requirements at LCC:

- ECON 200 - Principles of Economics: Introduction to Economics 3 Credit(s)
- Choose one: CS 120 - Concepts of Computing: Information Processing 4 Credit(s), CIS 101 - Computer Fundamentals 4 Credit(s), or BT 120 - MS WORD for Business 4 Credit(s)

Any college-level courses that bring total credits to 90 credits, with the following limitations:

- Up to 12 credits of Career Technical Education. See the list of Course Types by Prefix. Policies on accepting career-technical credits vary at four-year institutions in Oregon. Consult an academic advisor about taking these courses as electives.
- Up to 18 credits of Cooperative Education may be included as electives. Cooperative Education courses identified as career Technical Education courses count toward the 12-credit maximum for Career Technical Education.
- Up to 12 credits of Individual Music Lessons (MUP).

- Maximum 3 credits of activity courses (PE, PEAT, PEO, D) may be included within the entire degree, with the exception of D 160, 251, 256, and 260.
- WR 115 may be included in the degree as an elective if completed summer 1999 or later.
- Transfer institution requirements. Consult Lane's Academic Advising department for a list of recommended coursework. Transfer institution requirements may change without notice.

Recommended Electives by Institution

University of Oregon

- MTH 243 - Introduction to Probability and Statistics 4 Credit(s)
- Business Courses
- Additional General Education as needed by UO. See list of LCC courses that transfer. Connect with UO to determine exactly what to take.

Oregon State University

- BA 223 - Marketing 4 Credit(s)
- BA 250 - Small Business Management 4 Credit(s)
- Additional General Education as needed by OSU. See list of LCC courses that transfer. Connect with OSU to determine exactly what to take.

Portland State University

- Business Courses
- Additional General Education as needed by PSU. Connect with PSU to determine exactly what to take.

For all other Oregon universities, please connect with your desired transfer institution to determine any additional requirements that can be completed at the community college.

Notes

- This program follows Associate of Arts (AAT) / Associate of Science (AST) Requirements unless otherwise specified.
- Students must complete all required courses to earn this degree. Equivalent courses of 3 credits or higher may be transferred in and used to meet core or major requirements. To earn a Core Transfer Map (CTM) transcript notation, students must complete required courses and have a minimum of 30 CTM credits.
- College-level courses are numbered 100 or higher. Courses numbered 001-099 identify developmental courses (e.g. RD 090), with the exception of ENG 110, 116, 117; MTH 100, RD 115, WR 110, 120, and WR 115 (taken before summer 1999), which are also considered developmental.
- University second language admission requirements for transfer students graduating high school 1997 or later include one of the following:
 - Two terms of the same college-level second language with an average grade of C- or above
 - Two years of the same high school-level second language with an average grade of C- or above
 - Satisfactory performance on an approved second language assessment of proficiency
 - Demonstrated proficiency in American Sign Language meets second language admission requirements
- Credit-by-Exam and Credit-by-Assessment may comprise no more than 25% of total degree credits.
- Only the Academic Requirements Review Committee (ARRC) may waive a college-related instruction requirement. Petitions are available from Enrollment Services at <https://www.lanecc.edu/administration/enrollment-services/general-education-substitution-and-waiver-petition>.
- Repeatable courses may be used once to meet a Core Transfer Map requirement. Any additional allowable repeats may be used to meet Elective requirements.

- Some courses are included on more than one Core Transfer Map list. These courses may be used only once to meet a specific Core Transfer Map requirement. Please contact your academic advisor for details.
- Courses numbered 197, 198, 199, 280, 297, 298, or 299 count as electives and do not meet Core Transfer Map requirements. Courses numbered 199 and 299 are experimental and may later be reviewed and approved to meet Core Transfer Map requirements.

Associate of General Studies (AGS)

The Associate of General Studies (AGS) degree will be awarded to students who complete a curriculum generally designed to meet broad educational goals. The AGS may be earned through coursework that includes lower-division collegiate and elective courses, or a combination of courses that includes career-technical education.

Due to this degree's flexibility, it is not considered to be a transfer degree. It does not guarantee admission to a four-year institution, nor does it ensure all lower-division general education requirements have been met. Students should work closely with an Academic Advisor to craft a degree plan appropriate to their educational goals.

Estimated Cost: \$15,408

- Resident Tuition: \$11,925*
- Technology Fees: \$1,170
- General Student Fees: \$813**
- Online Course Fees: (if applicable)***
- Books / Course Materials: \$1,500****

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>.

General Education degrees costs are based on 90 credits and 6 terms

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

***Online Course Fees: \$10.00 per course, maximum of \$50.00 per course

****Books and materials will vary by class. Please refer to your program or course for specific information on book and material charges. Open Educational Resources (OER) may be available to take the place of more expensive textbooks, reducing the overall cost of taking the class. For more information on classes using free and low-cost materials, visit <https://inside.lanecc.edu/oer> or email oer@lanecc.edu

Learning Outcomes

Students who complete this degree will have a broad knowledge base cultivated through coursework that spans a variety of discipline areas. Students who complete the AGS will be able to:

- Examine complex issues using multiple information sources and evidence
- Describe the impact of diverse cultural, political, and scientific perspectives on individuals, societies, and environments
- Communicate effectively and purposefully within different contexts and across modes of communication
- Apply learning through integration of theory and practice

This degree is aligned with Lane's Institutional Learning Outcomes.

Guidelines

1. Complete a total of 90 credits of college-level coursework (see notes).
2. Complete at least 24 credits at Lane.
3. Foundational Skills and Discipline Studies courses must be a minimum of 3 credits, except for Health/Wellness/Fitness courses, which may be any number of credits.
4. All Elective courses may be any number of credits.
5. Complete all Foundational Skills with a grade of C- or better, or Pass.
6. Complete all Discipline Studies and Elective courses with a grade of D- or better, or Pass.
7. Maximum 16 credits Pass may be used toward degree. This limit does not include courses only offered P/NP.

- Cumulative GPA must be at least 2.0 at the time the Associate of General Studies degree is awarded.

Foundational Skills

Foundational Skills must be completed with a grade of "C-" or better, or Pass.

Writing

- WR 121_H / WR 121 - Academic Composition 4 Credit(s)

Mathematics

MTH 052 satisfies this degree requirement but does not meet college-level requirements. Students who use developmental math to meet this requirement need to reach 90 credits total of college-level coursework to meet degree requirements.

- MTH 052 - Math for Health and Physical Sciences 4 Credit(s) or higher-level Math course

Health/Wellness/Fitness

Complete one or more courses, totaling at least three credits, from the Health/Wellness/Fitness list.

Discipline Studies

Complete 16 credits of Discipline Studies requirements, including one course from each discipline below. Additional credits to meet a minimum of 16 credits may be completed from any discipline below. Discipline Studies must be completed with a grade of "D-" or better, or Pass.

Arts and Letters

Complete a minimum of one course from the Arts and Letters list.

Social Science

Complete a minimum of one course from the Social Science list

Science/Math/Computer Science

Complete a minimum of one course (lab or non-lab) from the Science/Math/Computer Science list.

Notes:

-Mathematics: College-level mathematics (MTH 105 or higher) may be used to meet this requirement.
 -Biology: 100-level Biology courses are not repeatable. Students may only use one BI 101, one BI 102, and one BI 103 to meet requirements for any Lane degree, regardless of letter option.
 -Chemistry: General Chemistry and Organic Chemistry series have separate lab courses. It is highly recommended students take lecture and lab courses together.
 -Computer Programming: Students who complete more than one CS 161 or CS 162 programming language course should be aware that transfer institutions may count multiple 161 or 162 courses as repeats, **and may not accept them in transfer**. Students wishing to complete multiple programming courses should first take a CS 161/162 series and then enroll in CS 133/233 course series for any subsequent programming languages.

Additional Discipline Studies

Complete additional Discipline Studies courses to meet a minimum of 16 credits from any of the following lists:

- Arts and Letters
- Social Science
- Science/Math/Computer Science

Electives

Any college-level courses that bring total credits to 90 credits. Courses completed may include any combination of lower-division collegiate and/or career technical education courses. All courses must be 100-level or higher and may include:

- Up to 18 credits of Cooperative Education may be included as electives. Cooperative Education courses identified as Career Technical Education courses count toward the 12-credit maximum for Career Technical Education.
- Up to 12 credits of Individual Music Lessons (MUP).
- 12 credits of activity courses (PE, PEAT, PEO, D) may be included within the entire degree, with the exception of D 160, 251, 256, and 260.
- See Course Types by Prefix. Policies on accepting career technical credits vary at four-year institutions in Oregon. Consult an academic advisor about taking these courses as electives.

Notes

- College-level courses are numbered 100 or higher. Courses numbered 001-099 identify developmental courses (e.g. RD 090), with the exception of ENG 110, 116, 117; MTH 100, RD 115, WR 110, 120, and WR 115 (taken before summer 1999), which are also considered developmental.
- Foundational Skills are open to demonstration of proficiency. For information on waiver testing or credit for prior learning, contact an academic advisor. Waiver testing is not the same as placement testing.
- 200-level second language courses count toward the Arts and Letters requirement. American Sign Language (ASL) is considered a second language.
- University second language admission requirements for transfer students graduating high school 1997 or later include one of the following:
 - Two terms of the same college-level second language with an average grade of C- or above.
 - Two years of the same high school-level second language with an average grade of C- or above.
 - Satisfactory performance on an approved second language assessment of proficiency.
 - Demonstrated proficiency in American Sign Language meets second language admission requirements.
- Credit-by-Exam and Credit-by-Assessment may comprise no more than 25% of total degree credits.
- Repeatable courses may be used once to meet a Discipline Studies requirement. Any additional allowable repeats may be used to meet Elective requirements.
- Some courses are included on more than one Discipline Studies list. These courses may be used only once to meet a specific Discipline Studies requirement. Please contact your academic advisor for details.
- Lower-division college-level courses taken at Lane will not always meet the same requirements an upper-division college-level course with similar content does at a four-year transfer institution. In such cases, the course(s) in question will generally transfer as an elective. Please contact specific four-year schools for details.
- General information on transferring in credits from a prior institution: <https://www.lanecc.edu/costs-admission/transferring-prior-college-credit-lane>
- Courses numbered 197, 198, 199, 280, 297, 298, or 299 count as electives and do not meet Foundational Skills or Discipline Studies requirements. Courses numbered 199 and 299 are experimental and may later be reviewed and approved to meet Discipline Studies requirements.
- The AGS is not ideal for students planning to transfer to a four-year institution. However, some students may benefit from the flexible framework of the AGS and use it for transfer on a limited basis. Students planning to transfer should work closely with their academic advisor.

Approved Discipline Studies Courses for Associate Degrees and Oregon Transfer Module

The courses on the following lists are approved for these degree and transfer programs:

- *Associate of Applied Science (AAS)
- Associate of Arts Oregon Transfer
- Associate of Arts Transfer / Associate of Science Transfer
- Associate of General Studies
- Associate of Science Oregon Transfer - Business
- Associate of Science Oregon Transfer - Computer Science
- Oregon Transfer Module

*Associate of Applied Science (AAS) degrees are crafted to meet specific career or professional outcomes and may include or allow courses other than what are on these lists to count toward general education outcomes.

Note about Cultural Literacy: Courses approved for the Cultural Literacy requirement are marked with ^{CL} in the lists of courses. A Cultural Literacy course may also be used to satisfy one Discipline Studies requirement, but the credits will only be counted once toward the 90-credit total required to earn the degree.

Arts and Letters

Although these courses are listed under categories, they may satisfy a different general education category at a receiving institution. Work with an Academic Advisor to determine transferability.

Approved Courses

Note: Courses marked with ^{CL} are approved to meet the Cultural Literacy requirement.

Art

- ART 111 - Introduction to Visual Arts 3 Credit(s)
- ART 115 - Basic Design: Fundamentals 3 Credit(s)
- ART 115_H - Basic Design: Fundamentals-Honors 3 Credit(s)
- ART 116 - Basic Design: Color 3 Credit(s)
- ART 117 - Basic Design: 3-Dimensional 3 Credit(s)
- ART 118 - Artist Books and Pop-up 4 Credit(s)
- ART 120 - Intermediate Artist Books and Pop-up 4 Credit(s)
- ART 131 - Introduction to Drawing 3 Credit(s)
- ART 220 - Documentary Photography 3 Credit(s)
- ART 231 - Drawing: Intermediate 3 Credit(s)
- ART 234 - Drawing: Figure 3 Credit(s)
- ART 237 - Illustration 1 3 Credit(s)
- ART 240 - Natural Science Drawing 3 Credit(s)
- ART 248 - Stone Sculpture 3 Credit(s)
- ART 250 - Ceramics: Hand Building 3 Credit(s)
- ART 251 - Ceramics: Wheel Throwing 3 Credit(s)
- ART 253 - Ceramics: Intermediate 3 Credit(s)
- ART 261 - Photography 1 3 Credit(s)
- ART 270 - Printmaking: Traditional and Digital Etching 3 Credit(s)
- ART 271 - Printmaking: Woodcut and Linocut 3 Credit(s)
- ART 272 - Printmaking: Experimental Processes 3 Credit(s)
- ART 273 - Printmaking: Intermed. Traditional and Digital Etching 3 Credit(s)
- ART 274 - Printmaking: Intermed. Woodcut and Linocut 3 Credit(s)
- ART 275 - Screen Printing 3 Credit(s)
- ART 276 - Sculpture: Introduction 3 Credit(s)
- ART 277 - Sculpture: Welding 3 Credit(s)
- ART 278 - Sculpture: Wood 3 Credit(s)
- ART 281 - Painting: Introduction 3 Credit(s)
- ART 282 - Landscape and Architectural Photography 4 Credit(s)
- ART 284 - Painting: Intermediate 3 Credit(s)
- ART 285 - Advanced Screen Printing 3 Credit(s)
- ART 291 - Sculpture: Metal Casting 5 Credit(s)
- ART 293 - Sculpture: Figure 3 Credit(s)
- ART 294 - Watercolor: Introduction 3 Credit(s)
- ART 295 - Watercolor: Intermediate 3 Credit(s)

Art History

- ARH 200 - History of Design Arts 3 Credit(s)
- ARH 203 - Survey of American Indian Art and Architecture: North and Central America 4 Credit(s) ^{CL}
- ARH 204 - History of Western Art 1 3 Credit(s)
- ARH 205 - History of Western Art 2 3 Credit(s)
- ARH 206 - History of Western Art 3 3 Credit(s)
- ARH 207 - History of Indian Art 3 Credit(s) ^{CL}
- ARH 208 - History of Chinese Art 3 Credit(s) ^{CL}

- ARH 209 - History of Japanese Art 3 Credit(s) ^{CL}
- ARH 211 - Early Modern Art: 1850-1910 3 Credit(s)
- ARH 212 - Twentieth-Century Art 3 Credit(s)
- ARH 214 - Arts of the United States 3 Credit(s)
- ARH 217 - History of Middle Eastern and Islamic Art 3 Credit(s) ^{CL}
- ARH 218 - History of Photography: 1700-1910 3 Credit(s)
- ARH 219 - History of Photography: 1910-1950 3 Credit(s)
- ARH 220 - History of Photography: 1950-Present 3 Credit(s)

Chinuk Wawa

- CW 201 - Chinuk Wawa 4 Credit(s) ^{CL}
- CW 202 - Chinuk Wawa 4 Credit(s) ^{CL}
- CW 203 - Chinuk Wawa 4 Credit(s) ^{CL}

Cinema Studies

- CINE 265 - Film History 1-The Silent Era to Early Sound 4 Credit(s)
- CINE 266 - Film History 2-The Sound Era through 1960s 4 Credit(s)
- CINE 267 - Film History 3-1960s-the present 4 Credit(s)

Communications

- COMM 100 - Basic Communication 4 Credit(s)
- COMM 105 - Listening and Critical Thinking 4 Credit(s)
- COMM 111 - Fundamentals of Public Speaking 4 Credit(s)
- COMM 111_H - Fundamentals of Public Speak-Honors 4 Credit(s)
- COMM 112 - Persuasive Speech 4 Credit(s)
- COMM 115 - Intro to Intercultural Communication 4 Credit(s) ^{CL}
- COMM 130 - Business and Professional Communication 4 Credit(s)
- COMM 218 - Interpersonal Communication 4 Credit(s)
- COMM 219 - Small Group Communication 4 Credit(s)
- COMM 220 - Communication, Gender and Culture 4 Credit(s) ^{CL}
- COMM 265 - Environmental Communication 4 Credit(s)
- COMM 285 - Mediated Communication 4 Credit(s)
- COMM 296 - Communication in Healthcare Settings 4 Credit(s)

Creative Writing

- CRWR 240 - Creative Writing: Nonfiction 4 Credit(s)
- CRWR 241 - Creative Writing: Fiction 4 Credit(s)
- CRWR 242 - Creative Writing: Poetry 4 Credit(s)
- CRWR 242_H - Creative Writing: Poetry-Honors 4 Credit(s)

Dance

- D 160 - Dance Composition 3 Credit(s)
- D 251 - Looking at Dance 4 Credit(s) ^{CL}
- D 260 - Group Choreography 3 Credit(s)

English

- ENG 100 - Children's Literature 4 Credit(s)
- ENG 104 - Introduction to Literature: Fiction 4 Credit(s)
- ENG 104_H - Introduction to Literature: Fiction-Honors 4 Credit(s)
- ENG 105 - Introduction to Literature: Drama 4 Credit(s)
- ENG 105_H - Introduction to Literature: Drama-Honors 4 Credit(s)
- ENG 106 - Introduction to Literature: Poetry 4 Credit(s)
- ENG 106_H - Introduction to Literature: Poetry-Honors 4 Credit(s)
- ENG 107 - Survey of World Literature 4 Credit(s) ^{CL}
- ENG 109 - Survey of World Literature 4 Credit(s) ^{CL}
- ENG 151 - Black American Literature 4 Credit(s) ^{CL}
- ENG 194 - Literature of Comedy 4 Credit(s)
- ENG 201 - Shakespeare 4 Credit(s)
- ENG 203 - Shakespeare 4 Credit(s)
- ENG 204 - Survey of British Literature 4 Credit(s)
- ENG 205 - Survey of British Literature 4 Credit(s)
- ENG 215 - Latino/a Literature 4 Credit(s) ^{CL}
- ENG 217 - Reading, Writing and Digital Culture 4 Credit(s)
- ENG 222 - Literature and Gender 4 Credit(s) ^{CL}
- ENG 232 - Native American Literature, Myth & Folklore 4 Credit(s) ^{CL}

- ENG 240 - Nature Literature 4 Credit(s)
- ENG 243 - Native American Autobiography 4 Credit(s) ^{CL}
- ENG 244 - Asian American Literature 4 Credit(s) ^{CL}
- ENG 250 - Introduction to Folklore and Mythology 4 Credit(s) ^{CL}
- ENG 253 - Survey of American Literature 4 Credit(s)
- ENG 254 - Survey of American Literature 4 Credit(s)
- ENG 257 - The American Working Class in Fiction & Non-Fiction 4 Credit(s) ^{CL}
- ENG 260 - Introduction to Women Writers 4 Credit(s) ^{CL}
- ENG 261 - Science Fiction 4 Credit(s)
- ENG 270 - Bob Dylan: American Poet 4 Credit(s)
- ENG 282 - Introduction to Comics-Graphic Novels 4 Credit(s)

Ethnic Studies

- ES 244 - Native American Leadership 1: Building Leadership Through Indigenous Oratory 4 Credit(s) ^{CL}

Film Arts

- FA 255 - Understanding Movies: American Cinema 3 Credit(s)
- FA 264 - Women Make Movies 4 Credit(s) ^{CL}
- FA 270C - Film Genres: Comedy 4 Credit(s)
- FA 270H - Film Genres: Horror 4 Credit(s)
- FA 270N - Film Genres: Noir 4 Credit(s)
- FA 276 - Gender, Race, and Class in U.S. Cinema 4 Credit(s) ^{CL}

French

- FR 201 - Second-Year French 4 Credit(s)
- FR 202 - Second-Year French 4 Credit(s)
- FR 203 - Second-Year French 4 Credit(s)
- FR 288 - Study Abroad: French Language and Culture in Normandy 6 Credit(s) ^{CL}

Humanities

- HUM 100 - Humanities Through the Arts 4 Credit(s)

Journalism

- J 134 - Photojournalism 3 Credit(s)
- J 216 - Newswriting 1 3 Credit(s)

Music

- MUS 101 - Music Fundamentals 3 Credit(s)
- MUS 103 - Songwriting Techniques and Analysis 1 3 Credit(s) ^{CL}
- MUS 111 - Music Theory 1 (First Term) 4 Credit(s)
- MUS 112 - Music Theory 1 (Second Term) 4 Credit(s)
- MUS 113 - Music Theory 1 (Third Term) 4 Credit(s)
- MUS 118 - Music Technology MIDI/Audio 1 4 Credit(s)
- MUS 119 - Music Technology MIDI/Audio 2 4 Credit(s)
- MUS 201 - Exploring Music: Introduction to Music History 3 Credit(s)
- MUS 202 - Exploring Music: Intro to Music History 3 Credit(s)
- MUS 203 - Exploring Music: Introduction to Music History 3 Credit(s)
- MUS 205 - Introduction to Jazz History 3 Credit(s) ^{CL}
- MUS 211 - Music Theory 2: (First Term) 3 Credit(s)
- MUS 212 - Music Theory 2 (Second Term) 3 Credit(s)
- MUS 213 - Music Theory 2 (Third Term) 3 Credit(s)
- MUS 260 - History of Hip-Hop and Rap Music 3 Credit(s) ^{CL}
- MUS 264 - Roots of Rock (Roots-1963) 4 Credit(s) ^{CL}
- MUS 265 - Golden Age of Rock & Roll (1964-1974) 4 Credit(s) ^{CL}
- MUS 266 - Rockin' the New Millennium (1974-2006) 4 Credit(s) ^{CL}
- MUS 268 - History of Electronic Music 3 Credit(s)

Philosophy

- PHL 201 - Ethics 4 Credit(s)
- PHL 202 - Theories of Knowledge 4 Credit(s)
- PHL 203 - Theories of Reality 4 Credit(s)
- PHL 221 - Critical Thinking 4 Credit(s)

Spanish

- SPAN 201 - Spanish, Second-Year 4 Credit(s)
- SPAN 202 - Spanish, Second-Year 4 Credit(s)
- SPAN 203 - Spanish, Second-Year 4 Credit(s)
- SPAN 218 - Spanish for Spanish-Speakers 4 Credit(s)

Theatre Arts

- TA 140 - Acting Shakespeare 4 Credit(s)
- TA 141 - Acting 1 4 Credit(s)
- TA 142 - Acting 2 4 Credit(s)
- TA 143 - Acting 3 4 Credit(s)
- TA 144 - Improv 4 Credit(s)
- TA 241 - Intermediate Acting 1 4 Credit(s)
- TA 242 - Intermediate Acting 2 4 Credit(s)
- TA 243 - Acting for the Camera 4 Credit(s)
- TA 272 - Introduction to Theatre 4 Credit(s) ^{CL}
- TA 272_H - Introduction to Theatre-Honors 4 Credit(s) ^{CL}

Health/Wellness/Fitness

Although these courses are listed under categories, they may satisfy a different general education category at a receiving institution. Work with an Academic Advisor to determine transferability.

Approved Courses

Physical Education

Students may use courses from any of the following categories to meet Health/Wellness/Fitness degree requirements:

- Physical Education (PE)
- Physical Education - Athletics (PEAT)
- Physical Education - Outdoor Education (PEO)

Dance

- D 152 - Dance Basics 2 Credit(s)
- D 153 - Pilates Workout 2 Credit(s)
- D 160 - Dance Composition 3 Credit(s)
- D 172 - Dancing the Fluid Body 2 Credit(s)
- D 176 - Fluid Yoga 2 Credit(s)
- D 177 - Contemporary Dance 1 2 Credit(s)
- D 178 - Contemporary Dance 2 2 Credit(s)
- D 179 - Contemporary Dance 3 2 Credit(s)
- D 183 - Meditation in Motion 2 Credit(s)
- D 184 - Hip Hop 1 2 Credit(s)
- D 185 - Ballet 1 2 Credit(s)
- D 186 - Ballet 2 2 Credit(s)
- D 187 - Ballet 3 2 Credit(s)
- D 188 - Jazz Dance 1 2 Credit(s)
- D 194 - Hip Hop 2 2 Credit(s)
- D 257 - Dance Improvisation 2 Credit(s)
- D 260 - Group Choreography 3 Credit(s)

Health

- FLS 214 - Physical Exercise and Healthy Aging 3 Credit(s)
- FN 225 - Nutrition 4 Credit(s)
- HE 152 - Drugs, Society and Behavior 3 Credit(s)
- HE 209 - Human Sexuality 3 Credit(s)
- HE 212 - Women's Health 3 Credit(s)
- HE 240 - Holistic Health 3 Credit(s)
- HE 250 - Personal Health 3 Credit(s)
- HE 252 - First Aid 3 Credit(s)
- HE 255 - Global Health and Sustainability 4 Credit(s)
- HE 275 - Lifetime Health and Fitness 3 Credit(s)

Oral Communication

Although these courses are listed under categories, they may satisfy a different general education category at a receiving institution. Work with an Academic Advisor to determine transferability

Approved Courses

- COMM 100 - Basic Communication 4 Credit(s)
- COMM 111 - Fundamentals of Public Speaking 4 Credit(s)
- COMM 111_H - Fundamentals of Public Speak-Honors 4 Credit(s)
- COMM 112 - Persuasive Speech 4 Credit(s)
- COMM 130 - Business and Professional Communication 4 Credit(s)
- COMM 218 - Interpersonal Communication 4 Credit(s)
- COMM 219 - Small Group Communication 4 Credit(s)

Science/Math/Computer Science

Although these courses are listed under categories, they may satisfy a different general education category at a receiving institution. Work with an Academic Advisor to determine transferability.

Sciences that transfer individually to UO: Science (AAOT/UO)

Approved Lab Courses

CULTURAL LITERACY NOTE: Courses marked with ^{CL} are approved to meet the Cultural Literacy requirement.

Astronomy

- ASTR 121 - Astronomy of the Solar System 4 Credit(s)
- ASTR 122 - Stellar Astronomy 4 Credit(s)
- ASTR 123 - Cosmology and the Large-Scale Structure of the Universe 4 Credit(s)

Biology

NOTE: Students may only use one BI 101, one BI 102, and one BI 103 to meet requirements for any Lane degree, regardless of letter option.

- BI 101 - General Biology 4 Credit(s)
- BI 101_H - General Biology-Honors 4 Credit(s)
- BI 101E - General Biology-Ocean Life Foundations 4 Credit(s)
- BI 101F - General Biology-Survey of Biology 4 Credit(s)
- BI 101I - General Biology-Botanical Beginnings 4 Credit(s)
- BI 101J - General Biology-Unseen Life on Earth 4 Credit(s)
- BI 101K - General Biology: Introduction to Genetics 4 Credit(s)
- BI 102 - General Biology 4 Credit(s)
- BI 102C - General Biology-Marine Biology 4 Credit(s)
- BI 102D - General Biology-Survey of Biology 4 Credit(s)
- BI 102E - General Biology-Animal Biology 4 Credit(s)
- BI 102G - General Biology: Genetics and Society 4 Credit(s)
- BI 102H - General Biology-Forest Biology 4 Credit(s)
- BI 102I - General Biology-Human Biology 4 Credit(s)
- BI 103 - General Biology 4 Credit(s)
- BI 103A - General Biology-Birds of Oregon 4 Credit(s)
- BI 103D - General Biology: Sea Birds and Mammals 4 Credit(s)
- BI 103E - General Biology: Survey of Biology 4 Credit(s)
- BI 103F - General Biology-Wildflowers of Oregon 4 Credit(s)
- BI 103G - General Biology: Global Ecology 4 Credit(s) ^{CL}
- BI 103H - General Biology-Mushrooms 4 Credit(s)
- BI 103J - General Biology: Forest Ecology 4 Credit(s)
- BI 103L - General Biology: Evolution and Diversity 4 Credit(s)
- BI 103M - General Biology: Biodiversity and Sustainability 4 Credit(s)
- BI 112 - Cell Biology for Health Occupations 4 Credit(s)
- BI 211 - Principles of Biology 4 Credit(s)
- BI 212 - Principles of Biology 4 Credit(s)
- BI 213B - Principles of Botany 4 Credit(s)
- BI 213Z - Principles of Zoology 4 Credit(s)
- BI 231 - Human Anatomy and Physiology 1 4 Credit(s)

- BI 232 - Human Anatomy and Physiology 2 4 Credit(s)
- BI 233 - Human Anatomy and Physiology 3 4 Credit(s)
- BI 234 - Introductory Microbiology 4 Credit(s)

Chemistry

NOTE: General and Organic Chemistry courses have separate labs. To meet an AAOT laboratory science requirement, you must complete both the lecture and accompanying lab (example: CH 221 + CH 227).

- CH 104 - Introduction to General Chemistry 5 Credit(s)
- CH 106 - Intro to Organic and Biological Chemistry 5 Credit(s)
- CH 114 - Introduction to Forensic Chemistry 4 Credit(s)
- CH 170 - Introduction to Environmental Chemistry 4 Credit(s)
- **General Chemistry**
- CH 221 - General Chemistry 1 4 Credit(s) + CH 227 2 Credit(s)
- CH 222 - General Chemistry 2 4 Credit(s) + CH 228 2 Credit(s)
- CH 223 - General Chemistry 3 4 Credit(s) + CH 229 2 Credit(s)
- **Organic Chemistry**
- CH 241 - Organic Chemistry 4 Credit(s) + CH 247 2 Credit(s)
- CH 242 - Organic Chemistry 4 Credit(s) CH 248 2 Credit(s)
- CH 243 - Organic Chemistry 4 Credit(s) CH 249 2 Credit(s)

Criminal Justice

- CJA 214 - Introduction to Forensic Science 4 Credit(s)

Environmental Science

- ENSC 181 - Terrestrial Environment 4 Credit(s)
- ENSC 182 - Atmospheric Environment & Climate Change 4 Credit(s)
- ENSC 182_H - Atmospheric Environment & Climate Change-Honors 4 Credit(s)
- ENSC 183 - Aquatic Environment 4 Credit(s)
- ENSC 183_H - Aquatic Environment-Honors 4 Credit(s)
- ENSC 265 - Environmental Science Field Methods 4 Credit(s)

General Science

- GS 101 - General Science (Nature of the Northwest) 4 Credit(s)
- GS 106 - Earth, Sea, Sky 4 Credit(s)
- GS 108 - Oceanography 4 Credit(s)
- GS 142 - Earth Science: Earth Revealed 4 Credit(s)

Geology

- G 101 - Earth's Dynamic Interior 4 Credit(s)
- G 102 - Earth's Dynamic Surface 4 Credit(s)
- G 103 - Evolving Earth 4 Credit(s)
- G 146 - Rocks and Minerals 4 Credit(s)
- G 147 - National Parks Geology 4 Credit(s)
- G 148 - Geologic Hazards 4 Credit(s)
- G 201 - Earth Materials and Plate Tectonics 4 Credit(s)
- G 202 - Earth's Surface Systems 4 Credit(s)
- G 203 - Evolution of the Earth 4 Credit(s)

Geographic Information Science

- GIS 151 - Digital Earth 4 Credit(s)
- GIS 245 - GIS 1 4 Credit(s)
- GIS 246 - GIS 2 4 Credit(s)

Horticulture

- HORT 120 - Gardening and Sustainable Food Systems 4 Credit(s)

Physics

- PH 101 - Fundamentals of Physics 4 Credit(s)
- PH 102 - Fundamentals of Physics 4 Credit(s)
- PH 103 - Fundamentals of Physics 4 Credit(s)
- PH 201 - General Physics 5 Credit(s)
- PH 202 - General Physics 5 Credit(s)
- PH 203 - General Physics 5 Credit(s)
- PH 211 - General Physics with Calculus 5 Credit(s)
- PH 212 - General Physics with Calculus 5 Credit(s)

- PH 213 - General Physics with Calculus 5 Credit(s)

Soil Science

- SOIL 205 - Introduction to Soil Science 4 Credit(s)

Watershed Science

- WST 230 - Watersheds and Hydrology 4 Credit(s)

Approved Non-Lab Courses

CULTURAL LITERACY NOTE: Courses marked with ^{CL} are approved to meet the Cultural Literacy requirement.

Anthropology

- ANTH 101 - Physical Anthropology 4 Credit(s)
- ANTH 102 - World Archaeology 4 Credit(s) ^{CL}

Chemistry

- CH 112 - Chemistry for Health Occupations 4 Credit(s)
- CH 221 - General Chemistry 1 4 Credit(s)
- CH 222 - General Chemistry 2 4 Credit(s)
- CH 223 - General Chemistry 3 4 Credit(s)
- CH 241 - Organic Chemistry 4 Credit(s)
- CH 242 - Organic Chemistry 4 Credit(s)
- CH 243 - Organic Chemistry 4 Credit(s)

Computer Science

Students who complete more than one CS 161 or CS 162 programming language course should be aware that transfer institutions may count multiple 161 or 162 courses as repeats, **and may not accept them in transfer**. Students wishing to complete multiple programming courses should first take a CS 161/162 series and then enroll in CS 133/233 course series for any subsequent programming languages.

- CS 160 - Orientation to Computer Science 4 Credit(s)
- CS 161C - Computer Science 1 4 Credit(s)
- CS 133C - Beginning Programming: C++ 4 Credit(s)
- CS 161N - Computer Science 1 4 Credit(s)
- CS 133N - Beginning Programming: C# 4 Credit(s)
- CS 161P - Computer Science 1 4 Credit(s)
- CS 133P - Beginning Programming: Python 4 Credit(s)
- CS 162C - Computer Science 2 4 Credit(s)
- CS 233C - Intermediate Programming: C++ 4 Credit(s)
- CS 162N - Computer Science 2 4 Credit(s)
- CS 233N - Intermediate Programming C# 4 Credit(s)
- CS 162P - Computer Science 2 4 Credit(s)
- CS 233P - Intermediate Programming: Python 4 Credit(s)
- CS 260 - Data Structures 1 4 Credit(s)

Dance

- D 256 - Anatomy of the Moving Body 4 Credit(s)

Geography

- GEOG 141 - Natural Environment 4 Credit(s)

General Science

- GS 201 - Scientific Skepticism - Someone is Wrong on the Internet! 4 Credit(s)

Mathematics

- MTH 105 - Math in Society 4 Credit(s)
- MTH 106 - Math in Society 2 4 Credit(s)
- MTH 107 - Math in Society 3 4 Credit(s)
- MTH 111 - College Algebra 5 Credit(s)
- MTH 112 - Trigonometry 5 Credit(s)
- MTH 211 - Fundamentals of Elementary Mathematics 1 4 Credit(s)
- MTH 212 - Fundamentals of Elementary Mathematics 2 4 Credit(s)
- MTH 213 - Fundamentals of Elementary Mathematics 3 4 Credit(s)
- MTH 231 - Discrete Mathematics 1 4 Credit(s)
- MTH 232 - Discrete Mathematics 2 4 Credit(s)

- MTH 241 - Elementary Calculus 1 4 Credit(s)
- MTH 242 - Elementary Calculus 2 4 Credit(s)
- MTH 243 - Introduction to Probability and Statistics 4 Credit(s)
- MTH 251 - Calculus 1 (Differential Calculus) 5 Credit(s)
- MTH 252 - Calculus 2 (Integral Calculus) 5 Credit(s)
- MTH 253 - Calculus 3 (Infinite Series and Sequences) 5 Credit(s)
- MTH 254 - Vector Calculus 1 (Introduction to Vectors and Multidimensions) 4 Credit(s)
- MTH 255 - Vector Calculus 2 (Introduction to Vector Analysis) 4 Credit(s)
- MTH 256 - Applied Differential Equations 4 Credit(s)
- MTH 260 - Linear Algebra 4 Credit(s)
- MTH 265 - Statistics for Scientists and Engineers 4 Credit(s)

Psychology

- PSY 212 - Learning and Memory 3 Credit(s)

Social Science

Although these courses are listed under categories, they may satisfy a different general education category at a receiving institution. Work with an Academic Advisor to determine transferability.

Social Sciences that transfer individually to UO: Social Science (AAOT/UO)

Approved Courses

Note: Courses marked with ^{CL} are approved to meet the Cultural Literacy requirement.

Anthropology

- ANTH 101 - Physical Anthropology 4 Credit(s)
- ANTH 102 - World Archaeology 4 Credit(s) ^{CL}
- ANTH 103 - Cultural Anthropology 4 Credit(s) ^{CL}
- ANTH 227 - Prehistory of Mexico 4 Credit(s) ^{CL}
- ANTH 228 - Chicano Cultures 4 Credit(s) ^{CL}
- ANTH 231 - American Indian Studies 3 Credit(s) ^{CL}
- ANTH 232 - American Indian Studies 3 Credit(s) ^{CL}

Business

- BA 101 - Introduction to Business 4 Credit(s)

Criminal Justice

- CJA 200 - Introduction to Criminology 4 Credit(s)

Economics

- ECON 200 - Principles of Economics: Intro to Economics 3 Credit(s)
- ECON 201 - Principles of Economics: Intro to Microeconomics 3 Credit(s)
- ECON 202 - Principles of Economics: Intro to Macroeconomics 3 Credit(s)
- ECON 204 - Introduction to International Economics 4 Credit(s)
- ECON 260 - Introduction to Environmental and Natural Resource Economics 4 Credit(s)

Education

- ED 100 - Introduction to Education 3 Credit(s)
- ED 216 - Foundations of Education 3 Credit(s)
- ED 230 - Language and Literacy 3 Credit(s)
- ED 233 - Adolescent Learning and Development 3 Credit(s)
- ED 258 - Multicultural Education 3 Credit(s) ^{CL}
- ED 269 - Inclusion and Special Needs 3 Credit(s)

Ethnic Studies

- ES 101 - Historical Racial and Ethnic Issues 4 Credit(s) ^{CL}
- ES 102 - Contemporary Racial and Ethnic Issues 4 Credit(s) ^{CL}
- ES 212 - Chicano/Latino Studies: Political and Ideological Perspectives 4 Credit(s) ^{CL}
- ES 213 - Chicano/Latino Studies: Contemporary Identity and Cultural Issues 4 Credit(s) ^{CL}

- ES 221 - African American Studies: Down from the Pyramids, Up from Slavery 4 Credit(s) ^{CL}
- ES 223 - African American Studies: A Luta Continua: The Struggle Continues 4 Credit(s) ^{CL}
- ES 224 - Black Male Studies: Lies, Literature, and Legacy 4 Credit(s) ^{CL}
- ES 241 - Native American Studies: Consequences of Native American and European Contact 4 Credit(s) ^{CL}
- ES 243 - Native American Studies: Contemporary Indigenous Issues 4 Credit(s) ^{CL}
- ES 244 - Native American Leadership 1: Building Leadership Through Indigenous Oratory 4 Credit(s) ^{CL}

Geography

- GEOG 141 - Natural Environment 4 Credit(s)
- GEOG 142 - Introduction to Human Geography 4 Credit(s) ^{CL}
- GEOG 201 - World Regional Geography 4 Credit(s) ^{CL}

Geographic Information Science

- GIS 151 - Digital Earth 4 Credit(s)
- GIS 245 - GIS 1 4 Credit(s)
- GIS 246 - GIS 2 4 Credit(s)

Health

- HE 212 - Women's Health 3 Credit(s)
- HE 255 - Global Health and Sustainability 4 Credit(s)

History

- HST 101 - Western Civilization: Ancient Mediterranean 4 Credit(s)
- HST 102 - Western Civilization: Making of Modern Europe 4 Credit(s)
- HST 103 - Western Civilization: Europe and the World 4 Credit(s)
- HST 104 - World History 4 Credit(s) ^{CL}
- HST 105 - World History 4 Credit(s) ^{CL}
- HST 106 - World History 4 Credit(s) ^{CL}
- HST 201 - History of the United States 4 Credit(s) ^{CL}
- HST 202 - History of the United States 4 Credit(s) ^{CL}
- HST 203 - History of the United States 4 Credit(s) ^{CL}
- HST 266 - US Women's History 4 Credit(s) ^{CL}

Philosophy

- PHL 201 - Ethics 4 Credit(s)
- PHL 202 - Theories of Knowledge 4 Credit(s)
- PHL 203 - Theories of Reality 4 Credit(s)
- PHL 221 - Critical Thinking 4 Credit(s)

Political Science

- PS 101 - Modern World Governments 4 Credit(s)
- PS 201 - U.S. Government and Politics 3 Credit(s)
- PS 202 - U.S. Government and Politics 3 Credit(s)
- PS 203 - State and Local Government and Politics 3 Credit(s)
- PS 205 - International Relations 3 Credit(s) ^{CL}
- PS 208 - Introduction to Political Theory 4 Credit(s)
- PS 211 - Peace and Conflict Studies: Global 4 Credit(s)
- PS 225 - Political Ideology 4 Credit(s)
- PS 275 - Legal Processes Through Civil Rights and Liberties 4 Credit(s)
- PS 297 - Environmental Politics 4 Credit(s)
- PS 297_H - Environmental Politics-Honors 4 Credit(s)

Psychology

- PSY 201 - General Psychology 4 Credit(s)
- PSY 201_H - General Psychology-Honors 4 Credit(s)
- PSY 202 - General Psychology 4 Credit(s)
- PSY 203 - General Psychology 4 Credit(s)
- PSY 215 - Lifespan Developmental Psychology 4 Credit(s)
- PSY 239 - Introduction to Abnormal Psychology 3 Credit(s)

Sociology

- SOC 108A - Selected Topics in Women's Studies, Women's Bodies, Women's Selves 3 Credit(s) ^{CL}
- SOC 204 - Introduction to Sociology 4 Credit(s)
- SOC 204_H - Introduction to Sociology-Honors 4 Credit(s)
- SOC 205 - Social Stratification and Social Systems 4 Credit(s)
- SOC 206 - Institutions and Social Change 4 Credit(s)
- SOC 207 - Women and Work 3 Credit(s) ^{CL}
- SOC 208 - Sport and Society 4 Credit(s) ^{CL}
- SOC 210 - Marriage, Family, and Intimate Relations 4 Credit(s)
- SOC 211 - Social Deviance 3 Credit(s)
- SOC 213 - Race and Ethnicity 4 Credit(s) ^{CL}
- SOC 215 - Social Class 4 Credit(s) ^{CL}
- SOC 218 - Sociology of Gender 4 Credit(s) ^{CL}
- SOC 228 - Introduction to Environmental Sociology 4 Credit(s)

Student Leadership Development

- SLD 103 - Post-Racial America: Challenges & Opportunities 4 Credit(s) ^{CL}
- SLD 111 - Chicano/Latino Leadership 1: Quien Soy? Quienes 4 Credit(s) ^{CL}
- SLD 112 - Chicano/Latino Leadership 2: Cultural Heroes 4 Credit(s) ^{CL}
- SLD 113 - Chicano/Latino Leadership 3: Affirmative & Resistance 4 Credit(s) ^{CL}
- SLD 121 - African American Leadership: History, Philosophy, & Practice 4 Credit(s) ^{CL}

Women's Studies

- WS 101 - Introduction to Women's Studies 4 Credit(s) ^{CL}

Associate of Applied Science (AAS)

All AAS programs follow the Associate of Applied Science (AAS) Requirements unless otherwise specified. See individual AAS degrees for specific program requirements. AAS degrees are intended to prepare graduates for direct entry into the workforce. AAS degrees may also help to prepare students for career advancement, occupational licensure, or further study at the baccalaureate level. These are general requirements for all Associate of Applied Science (AAS) degrees. See individual AAS programs for specific requirements.

Learning Outcomes

Lane degrees and certificates are aligned with Lane's Institutional Learning Outcomes. Associate of Applied Science degrees also have program-specific learning outcomes. See individual programs for details.

Degree Requirements

This degree will be awarded based on the following criteria. Students in specific AAS programs must also meet any program-specific criteria for degree completion.

- Complete a minimum of 90 credits.
- Complete a minimum of 24 credits at Lane.
- Unless otherwise specified by individual programs, complete all courses with a grade of C- or better, or Pass.
- Maximum 16 credits "Pass" may be used toward degree. This limit does not include courses only offered P/NP.
- Cumulative GPA must be at least 2.0 when the Associate of Applied Science degree is awarded.

General Education

General Education courses must be a minimum of 3 credits each. AAS degree programs must contain general education instruction in the areas of communication (writing), computation (mathematics), and human relations. Students in AAS degree programs must complete one course from each of the following categories.

Writing

Students who complete the Writing requirement will be able to:

- Apply effective communication skills

- Identify appropriate communication style (face-to-face, written, digital, etc.) for specific audiences

See your program for specific required courses. If not specified, take one course, minimum 3 credits, selected from the following:

- WR 115W - Introduction to College Writing: Workplace Emphasis 3 Credit(s)
- WR 115 - Introduction to College Composition 4 Credit(s)
- or higher-level WR course

Math

Students who complete the Mathematics requirement will be able to:

- Apply appropriate mathematical concepts or quantitative reasoning to solve problems
- Recognize which mathematical concepts are applicable to specific industry or organizational contexts

See your program for specific required MTH courses. If not specified, take one course, minimum 3 credits, selected from the following:

- MTH 025 - Basic Mathematics Applications
- or higher-level MTH course

Human Relations

Students who complete the Human Relations requirement will be able to:

- Communicate effectively with others in industry or organizational contexts
- Identify barriers to communication and how to overcome them
- Demonstrate characteristics of an effective team member
- Apply ethical decision-making in the workplace
- Demonstrate honesty and respect for other viewpoints

Three credits minimum, as specified by program, or if not specified, select from the following list:

- BA 278 - Leadership and Team Dynamics 4 Credit(s)
- CG 100 - College Success 1-3 Credit(s)
- CG 203 - Human Relations at Work 1-3 Credit(s)
- COMM 130 - Business and Professional Communication 4 Credit(s)
- COMM 218 - Interpersonal Communication 4 Credit(s)
- COMM 219 - Small Group Communication 4 Credit(s)
- COMM 260 - Introduction to Conflict Management 4 Credit(s)
- COMM 296 - Communication in Healthcare Settings 4 Credit(s)

Program Core Requirements

AAS degree programs include core courses that are aligned with program learning outcomes and are designed to prepare students with the knowledge, skills, and abilities needed to enter into a specific career or industry. See individual program information for specific course requirements.

Notes

- College-level courses are numbered 100 or higher. Courses numbered 001-099 are considered skills-based/developmental.
- Courses numbered 180, 197, 199, 280, 297, 298, or 299 counts as electives, and do not meet General Education requirements. Courses numbered 199 and 299 are experimental, and may later be reviewed and approved for this program.
- Credit-by-Exam and Credit-by-Assessment may comprise up to 25% of total degree credits.
- See the list of Course Types by Prefix. Policies on accepting career technical credits vary at four-year institutions in Oregon. Consult an academic advisor if considering transferring after earning an AAS.
- Only the Academic Requirements Review Committee (ARRC) may waive a college-related instruction requirement. Petitions are available from Enrollment Services at <https://www.lanecc.edu/administration/enrollment-services/general-education-substitution-and-waiver-petition>.
- Students may use up to 18 credits of Cooperative Education toward a degree/certificate at Lane Community College. Cooperative Education

may be used as part of Program Core Courses, not as General Education.

- HE 252 can be used in the Health/Wellness/Fitness category if taken in Summer 1997 or after. Prior to this, HE 252 would be considered an elective.
- Students may only use one BI 101, one BI 102, and one BI 103 to meet requirements for any Lane degree, regardless of letter option.

Accounting, AAS

Length: 90 credits

Program Contacts

- Offered by the Business Department
- Program Coordinators: Jill Gillett, gillettj@lanecc.edu, and Jeff Lanz, lanzj@lanecc.edu
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu
- Cooperative Education: <https://www.lanecc.edu/programs-academics/internships-cooperative-education>

Estimated Cost: \$18,753

- Resident Tuition: \$11,925*
- Technology Fees: \$1,170
- General Student Fees: \$813**
- Online Course Fee: \$900 (if applicable)
- Books / Materials: \$2,145 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Other Costs / Expenses: \$1800*** (if applicable for computer+internet)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>.

* Resident tuition is based on all program requirements (general education, core, directed electives). Any prerequisites required prior to the entry of the program will be listed separately.

** General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to prepare graduates to enter the field of accounting.

Students who complete this program will be able to:

- PLO 1 - Perform on the job in ways that reflect professional ethics, legal standards, and organizational expectations
- PLO 2 - Use accounting and financial information to make informed and timely planning and budgeting decisions to promote organizational goals
- PLO 3 - Utilize current software technologies, including word processing, spreadsheets, and document management systems to input, organize, create, and present professional documents, workpapers, and presentations for both internal and external users
- PLO 4 - Use research and analytical skills to gather and interpret data to support business decisions
- PLO 5 - Use computerized and manual systems to record accounting data and prepare accounting statements and reports
- PLO 6 - Operate effectively within time constraints to meet the accounting needs of financial, tax, payroll, and legal compliance requirements

Program Requirements

General Education

General Ed courses must be completed with a letter grade of C- or better, or Pass.

Writing (4 credits):

- WR 121_H / WR 121 - Academic Composition 4 Credit(s)

Mathematics (8-9 credits) - Complete two courses:

- Math Course #1 (4-5 credits) - Complete one of the following:

- MTH 098 - Math Literacy 5 Credit(s)
- MTH 095 - Intermediate Algebra 5 Credit(s)
- Any MTH course higher than MTH 095
- **Math Course #2 (4-5 credits) - Complete one of the following:**
 - MTH 105 - Math in Society 4 Credit(s)
 - Any MTH course higher than MTH 105

Health / PE / Dance (3 credits):

- Complete any Health (HE), Physical Education (PE, PEAT, PEO), or Dance (D) course or any combination of these courses.

Electives

- Students using lower-credit courses to meet General Education requirements may need to take additional 100-level or higher electives to reach the 90-credit minimum. See Courses for options.

Program Core Courses

Program Core courses must be completed with a letter grade of C- or better. P/NP is not accepted. BA 278 meets the Human Relations requirement.

- EL 121 - Effective Digital Learning 1-3 Credit(s) (complete 1 credit; recommended to take business focused section)
- BA 101 - Introduction to Business 4 Credit(s)
- BA 211 - Financial Accounting 4 Credit(s)
- BA 214 - Business Communications 4 Credit(s)
- BA 226 - Business Law 4 Credit(s)
- BA 278 - Leadership and Team Dynamics 4 Credit(s)
- BA 281 - Personal Finance 4 Credit(s)
- BT 108 - Business Proofreading and Editing 4 Credit(s)
- BT 120 - MS WORD for Business 4 Credit(s)
- BT 123 - MS EXCEL for Business 4 Credit(s)
- BT 163 - QuickBooks 4 Credit(s)
- BT 165 - Introduction to the Accounting Cycle 4 Credit(s)
- BT 170 - Payroll Records and Accounting 4 Credit(s)
- BT 221 - Budgeting for Managers 4 Credit(s)
- BT 223 - MS EXCEL for Business-Expert 4 Credit(s)
- BT 230 - Sustainable Paperless Practices 4 Credit(s)
- BT 272 - Tax concepts and Preparation 4 Credit(s)
- BT 286 - Professional Bookkeeping 4 Credit(s)

Cooperative Education

Cooperative Education and Seminar courses must be completed with a grade of C- or better. P/NP is not accepted.

Cooperative Education (5 credits) - Complete both of the following:

- Seminar - BT 206 - Co-op Ed: Business Seminar 2 Credit(s)
- Co-op Ed - BA 280AC - Co-op Ed: Accounting 3 Credits

Notes

- This program follows Associate of Applied Science (AAS) Requirements unless otherwise specified.
- Before enrolling in BT 120 - MS WORD for Business or BT 123 - MS EXCEL for Business, students are expected to have a basic knowledge of the Windows operating system and the ability to type 30 words per minute accurately.
- These courses may only be offered once per year: BT 170; BT 221; BT 223; BT 230; BT 272; BT 286. Contact the department or academic advisors for a class schedule.
- BT 206 - Co-op Ed: Business Seminar is preferred. Students may substitute the online seminar course COOP 206 for BT 206.

Automotive Technology, AAS

Length: 90 credits

Program Contacts

- Offered by: Advanced Technology Division

- Program Coordinator: Egan Riordon, riordone@lanecc.edu, 541-463-5092
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu
- Cooperative Education: <https://www.lanecc.edu/programs-academics/internships-cooperative-education>

Estimated Cost: \$18,843

- Resident Tuition: \$11,925*
- Technology Fees: \$1,170
- General Student Fees: \$813**
- Online Course Fee (if applicable)
- Books / Course Materials: \$610 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$1,085 (Class Fees and Materials)
- Differential Fees: \$ 3,240****

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to prepare students for employment as an Automotive Service Technician working at company-owned repair stations, fleets, independent garages, gas stations, or new car dealerships.

Students who complete this program will be able to:

PLO 1 - Use automotive service resources to complete lab projects and become familiar with computer accessed information, internet accessed information and information available in print related to automotive repair

PLO 2 - Perform computations for gear ratios, engine displacement, electrical circuits, power output, vehicle alignment angles, conversion between the metric system and standard system, and use of precision measuring tools

PLO 3 - Diagnose and repair current vehicles using advanced diagnostic tools and equipment

PLO 4 - Demonstrate and use industry safety standards

PLO 5 - Access library, computing, and communications services and obtain information and data from regional and national networks

PLO 6 - Interpret the concepts of a problem-solving task and translate them into mathematical equations

Program Requirements

General Education

General Ed courses must be completed with a grade of C- or better, or Pass.

Writing (3-4 credits) - Complete one of the following:

- WR 115W - Introduction to College Writing: Workplace Emphasis 3 Credit(s)
- WR 115 - Introduction to College Composition 4 Credit(s)
- Any WR course higher than WR 115

Math (4-5 credits) - Complete one of the following:

- MTH 085 - Applied Geometry for Technicians 4 Credit(s)
- MTH 097 - Geometry 4 Credit(s)
- MTH 112 - Trigonometry 5 Credit(s)

Human Relations (3-4 credits) - Complete one of the following:

- BA 278 - Leadership and Team Dynamics 4 Credit(s)
- CG 100 - College Success 1-3 Credit(s)
- CG 203 - Human Relations at Work 1-3 Credit(s)
- COMM 130 - Business and Professional Communication 4 Credit(s)
- COMM 218 - Interpersonal Communication 4 Credit(s)

- COMM 219 - Small Group Communication 4 Credit(s)
- COMM 260 - Introduction to Conflict Management 4 Credit(s)
- COMM 296 - Communication in Healthcare Settings 4 Credit(s)

Open Elective (1 credit):

- Complete any 100- or 200-level course to meet this requirement

Program Core Courses

Program Core courses must be completed with a grade of C- or better, or Pass. Students must complete the maximum credits listed for all core courses.

Enrollment in core courses by consent only. See an Academic Advisor or Program Coordinator about enrollment.

- AM 143 - Brakes 1-8 Credit(s)
- AM 145 - Engine Repair 1-12 Credit(s)
- AM 147 - Suspension and Steering 1-6 Credit(s)
- AM 149 - Manual Drive Trains and Axles 1-6 Credit(s)
- AM 242 - Automatic Transmissions/ Transaxles 1-12 Credit(s)
- AM 243 - Electrical and Electronic Systems 1-12 Credit(s)
- AM 244 - Engine Performance 1-12 Credit(s)
- AM 246 - Heating and Air Conditioning 1-4 Credit(s)
- **Welding (4 credits) - Complete one of the following:**
WLD 121 - Shielded Metal Arc Welding 1 (stick welding) 1-4 Credit(s)
WLD 143 - Wire Drive Welding 1 1-4 Credit(s)

Cooperative Education

Take 3 credits of AM 280 - Co-op Ed: Automotive

Notes

- This program follows Associate of Applied Science (AAS) Requirements unless otherwise specified
- A high school diploma or equivalent is recommended for all applicants to this program.
- Cooperative Education (Co-op) Co-op offers students college credit and a grade for on-the-job work experience related to their educational and career goals. Under the supervision of the Automotive Technology Co-op Coordinator and with instructor consent, a maximum of 18 Co-op credits in AM 280 may be earned in lieu of required Automotive Technology course credits. For more information please see your Academic Advisor or Program Coordinator.
- This program is articulated with Oregon Institute of Technology, which requires a higher-level math course than is required for the program. Contact your Academic Advisor for help with transfer.

Certification

Automotive Technology is certified by the National Automotive Technicians Education Foundation, a non-profit foundation within the National Institute for Automotive Service Excellence.

Aviation Maintenance Technician, AAS

Length: 104 credits

Program Contacts

- Offered by Lane Aviation Academy
- Program Coordinator: Neal Gallagher, Chief Instructor, gallagher@lanecc.edu, 541-463-4351
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Estimated Cost: \$22,325

- Resident Tuition: \$13,780*
- Technology Fees: \$1,352
- General Student Fees: \$843**

- Books / Course Materials: \$300 (***)This is the total of all the differential fees attached to the courses in this program.)
- Program Specific Fees: \$5,500 (Course Fees and Exams/Licensure)
- Other Cost / Expenses: \$500*** (Tool and Supplies)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/esfs/credit-tuition>.

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

To prepare technicians to repair and maintain the operating condition of aircraft, and qualify for Federal Aviation Administration (FAA) certification exams (written, oral and practical) for the Mechanic Certificate with Airframe and Powerplant Ratings.

Students who complete this program will be able to:

- PLO 1 - Pass FAA Written Airframe test
- PLO 2 - Pass FAA Oral Airframe test
- PLO 3 - Pass FAA Practical Airframe test
- PLO 4 - Pass FAA Written Powerplant test
- PLO 5 - Pass FAA Oral Powerplant test
- PLO 6 - Pass FAA Practical Powerplant test

Program Requirements

General Education

General Ed courses must be completed with a grade of C- or better, or Pass. MTH 075 (or equivalent) must be completed by the end of the Year One. MTH 085 (or equivalent) must be completed by the end of Winter Term, Year Two.

Writing (3-4 credits) - Complete one of the following:

- WR 115W - Introduction to College Writing: Workplace Emphasis 3 Credit(s)
- WR 115 - Introduction to College Composition 4 Credit(s)
- Any WR course higher than WR 115

Math (8 credits) - Complete both of the following courses:

- MTH 075 - Applied Algebra for Technicians 4 Credit(s)
- MTH 085 - Applied Geometry for Technicians 4 Credit(s)

Human Relations (3-4 credits) - Complete one of the following:

- BA 278 - Leadership and Team Dynamics 4 Credit(s)
- CG 100 - College Success 1-3 Credit(s)
- CG 203 - Human Relations at Work 1-3 Credit(s)
- COMM 130 - Business and Professional Communication 4 Credit(s)
- COMM 218 - Interpersonal Communication 4 Credit(s)
- COMM 219 - Small Group Communication 4 Credit(s)
- COMM 260 - Introduction to Conflict Management 4 Credit(s)
- COMM 296 - Communication in Healthcare Settings 4 Credit(s)

Program Core Courses

Program Core courses must be completed with a grade of C- or better, or Pass.

- AV 251 - General 101 6 Credit(s)
- AV 252 - General 102 6 Credit(s)
- AV 253 - General 103 6 Credit(s)
- AV 254 - General 104 6 Credit(s)
- AV 255 - General 105 6 Credit(s)
- AV 261 - Airframe 1 6 Credit(s)
- AV 262 - Airframe 2 6 Credit(s)
- AV 263 - Airframe 3 6 Credit(s)
- AV 264 - Airframe 4 6 Credit(s)
- AV 271 - Powerplant 1 6 Credit(s)
- AV 272 - Powerplant 2 6 Credit(s)

- AV 273 - Powerplant 3 6 Credit(s)
- AV 274 - Powerplant 4 6 Credit(s)
- AV 282 - Airframe Return to Service 6 Credit(s)
- AV 283 - Powerplant Return to Service 6 Credit(s)

Notes

- This program follows Associate of Applied Science (AAS) Requirements unless otherwise specified.
- Required for admission: Placement into WR 097 or WR 115, or prior college. A high school diploma or equivalent is recommended for all applicants to this program. Procedures for crediting and guidelines for the determination of documented military or field experience are available through the application with the FAA liaison.
- General Education courses (except mathematics) are not required for two-year FAA Airframe and Powerplant airman's certificate exams.
- MTH 075 - Applied Algebra for Technicians must be completed by the end of Year One.
- One of the following options may be substituted for MTH 075: 1) MTH 070 or 2) MTH 060 + MTH 065 or 3) MTH 095 or higher Algebra course or 4) Any 200-level math course (except MTH 243 and MTH 261).
- MTH 085 - Applied Geometry for Technicians must be completed by the end of Winter Term, Year Two.
- One of the following options may be substituted for MTH 085: 1) MTH 097 or 2) MTH 112.
- Writing requirements must be completed by the end of Year Two.
- Graduates hoping to transfer to a four-year institution should meet with their Academic Advisor or Program Coordinator.
- **Cooperative Education:** Under the supervision of the Aviation Maintenance Co-op Coordinator and as approved by the AMT Chief Instructor and Return to Service instructor, a maximum of six Co-op credits in AV 280 may be authorized in lieu of the final Return to Service course. Co-op may be taken summer term. Learn more about Cooperative Education at <https://www.lanecce.edu/cooped/contact>

Licensing and Certification

Accreditation: Aviation Maintenance, approved under Part 147 of the Federal Aviation Regulations of the Federal Aviation Administration.

Licensing and Certification: AMTS EM8T117Q Airframe and Powerplant Ratings.

Aviation Professional Pilot, AAS

Length: 91 credits

Program Contacts

- Offered by Lane Aviation Academy
- Program Director: Joshua M. Rickert, Director Lane Aviation Academy, rickertj@lanecce.edu 541-463-4319
- Academic Advising: <https://www.lanecce.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecce.edu

Estimated Cost: \$92,858 (Track A)

This track includes students under 180 lbs, under 6'2", under 39" sitting height

- Resident Tuition: \$12,058*
- Technology Fees: \$1,183
- General Student Fees: \$1,057**
- Online Course Fee: \$450 (if applicable)
- Books / Course Materials: \$1,800 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$76,041 (Application Fee, Course Fees and Exams/Licensure)
- Other Cost / Expenses: \$300*** (if applicable for Computer + internet)

Estimated Cost: \$95,057 (Track B)

This track includes students at or above 180lbs, over 6'2", over 39" sitting height

- Resident Tuition: \$12,058*
- Technology Fees: \$1,183
- General Student Fees: \$1,027**
- Online Course Fee: \$450 (if applicable)
- Books / Course Materials: \$1,800.00 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$78,240 (Application Fee, Course Fees and Exams/Licensure)
- Other Cost / Expenses: \$300*** (if applicable for Computer+ Internet)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecce.edu/costs-admission/tuition-fees-and-payments/credit-tuition>.

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

This program provides students training, certificates, and ratings needed to start a career as a commercial pilot. Students will receive the following:

- Private Pilot Certificate Instrument Rating
- Commercial Pilot Certificate
- Multi Engine Rating
- Certified Flight Instructor Certificate/Rating (CFI, CFII).

Students who complete this program will be able to:

PLO 1 - Explore and critically appraise various aviation careers and businesses

PLO 2 - Conduct safe and legal flight operations in accordance with FAA regulations

PLO 3 - Use a variety of avionics and navigation aids for both Visual (VFR) and Instrument (IFR) flight operations

PLO 4 - Apply the Aeronautical Decision Making model (ADM) with particular attention to the human element and its integration with technology, addressing FAA guidelines on hazardous attitudes

PLO 5 - Identify, assess, and respond to hazards to flight operations including weather, mechanical, medical, physiological, and psychological issues, in order to make sound go/no-go and in-flight decisions in normal and emergency circumstances

PLO 6 - Explain the functions and interactions of aerodynamics, aircraft systems, navigation, communications, regulations, and meteorology

PLO 7 - Develop and/or modify training course outlines, lesson plans, and teaching styles to meet the needs of the individual through application of FAA Fundamentals of Instruction (FOI)

Admission Information

This is a limited-enrollment program. Please visit the Aviation Academy web page for more information and to apply. There is a \$75.00 application fee. <https://www.lanecce.edu/programs-academics/academic-departments/aviation-academy>

The Aviation Professional Pilot Information Bulletin (APPIB) provides details of current flight training costs (hourly aircraft rental and instructional rates, etc.). The APPIB is provided to all students upon application via Lane's Etrieve Central document system and/or upon contacting Lane's Aviation Academy.

To align training with the weather, the Aviation Professional Pilot program only accepts new students summer term. On a limited basis, some students may begin flying spring term, but no other courses will be offered until summer. Students with previous training should contact the academy, as other options may be available.

Program Requirements

General Education

General Ed courses must be completed with a grade of C- or better, or Pass.

Writing (3-4 credits) - Complete one of the following:

- WR 115W - Introduction to College Writing: Workplace Emphasis 3 Credit(s)
- WR 115 - Introduction to College Composition 4 Credit(s)
- Any WR course higher than WR 115

Math (4-5 credits) - Complete one of the following:

- MTH 060 - Beginning Algebra 4 Credit(s)
- MTH 098 - Math Literacy 5 Credit(s)
- Any Math Course higher than MTH 060

Program Core Courses

Program Core courses must be completed with a grade of C- or better, or Pass. AP 225 satisfies the Human Relations requirement.

Track A courses designed for students at or above 180 lbs, over 6'2", over 39" sitting height

Track B courses designed for students under 180 lbs, under 6'2", under 39" sitting height

- AP 110A - Flight Lab - Pre-Solo 1 Credit(s) or AP 110B
- AP 112 - Private Pilot Ground School 5 Credit(s)
- AP 113 - Airman Certification Standards and Maneuvers 1 Credit(s)
- AP 115 - Intro to Aviation and Careers 1 Credit(s)
- AP 116 - Aviation History 4 Credit(s)
- AP 120A - Flight Lab - Private Pilot Certificate 1 Credit(s) or AP 120B
- AP 121 - Simulator Lab - Private 1 Credit(s)
- AP 125 - Aircraft Systems & Structures 1 2 Credit(s)
- AP 126 - Aviation Weather Services 2 Credit(s)
- AP 127 - Aerodynamics 3 Credit(s)
- AP 130 - Flight lab - Attitude Control 1 Credit(s)
- AP 132 - Instrument Ground School 5 Credit(s)
- AP 135 - Advanced Avionics 1 Credit(s)
- AP 140 - Flight Lab - Instrument Rating 1 Credit(s)
- AP 141 - Simulator Lab - Instrument 1 Credit(s)
- AP 210 - Flight Lab - Cross-Country 1 Credit(s)
- AP 212 - Commercial Pilot Ground School 5 Credit(s)
- AP 215 - Aircraft Systems & Structures 2 2 Credit(s)
- AP 220 - Flight Lab - Maneuvers 1 Credit(s)
- AP 221 - Simulator Lab - Commercial 1 Credit(s)
- AP 222 - CFI/CFII Ground School 3 Credit(s)
- AP 225 - FOI & Human Factors 3 Credit(s)
- AP 230 - Flight Lab - Commercial Pilot Certificate 1 Credit(s)
- AP 232 - Multi-Engine Ground School 2 Credit(s)
- AP 235 - Accident Investigations 3 Credit(s)
- AP 240 - Flight Lab - Multi-Engine Rating & CFI/CFII Certificate 1 Credit(s)
- BA 101 - Introduction to Business 4 Credit(s)
- BA 254 - General Aviation Management 3 Credit(s)
- GS 109 - Meteorology 5 Credit(s)
- UAS 123 - UAS Part 107 License Lab 1 Credit(s)

Electives

Program Electives courses must be completed with a grade of C- or better, or Pass. **Complete 17 credits from the following list:**

- AP 280 - Co-op Ed: Pro Pilot 3-12 Credit(s)
- BA 206 - Management Fundamentals 4 Credit(s)
- BA 278 - Leadership and Team Dynamics 4 Credit(s)
- COMM 100 - Basic Communication 4 Credit(s)
- COMM 105 - Listening and Critical Thinking 4 Credit(s)
- COMM 111 - Fundamentals of Public Speaking 4 Credit(s)
- COMM 111_H - Fundamentals of Public Speaking-Honors 4 Credit(s)
- COMM 218 - Interpersonal Communication 4 Credit(s)
- PH 101 - Fundamentals of Physics 4 Credit(s)

- PH 102 - Fundamentals of Physics 4 Credit(s)
- PH 103 - Fundamentals of Physics 4 Credit(s)

Notes

- This program follows Associate of Applied Science (AAS) Requirements unless otherwise specified.
- This is the parent program for the Aviation Commercial Pilot, CPC, Aviation Instrument Rating, CPC, and Aviation Private Pilot, CPC.

Certifications

- FAA Private Pilot Certificate
- FAA Instrument Rating
- FAA Commercial Pilot Certificate
- FAA Multi-Engine Rating
- FAA Certified Flight Instructor Certificate
- FAA Certified Flight Instructor – Instrument Certificate

Students must pass an FAA written test and meet FAA Airman Certification Standards before taking an FAA Practical Test for certificates and ratings listed above. Test are administered by the FAA or FAA Designated Pilot Examiners at the cost of the student.

Aviation Unmanned Aircraft Systems, AAS

Length: 90 credits

Program Contacts

- Offered by Lane Aviation Academy
- Program Coordinator: Solomon Singer, singers@lanecc.edu
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Estimated Cost: \$22,133

- Resident Tuition: \$11,925
- Technology Fees: \$1,170
- General Student Fees: \$843
- Online Course Fee: \$370 (if applicable)
- Books / Course Materials: \$1,500
- Program Specific Fees: \$5,825
- Other Costs: \$500 (if applicable for computer + internet)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

This program provides students with training and ratings/certificates for UAS Operation, UAS Maintenance, and UAS Manufacture to aviation and industry standards. Graduates obtain a Commercial Part 107 UAS Operator License and multiple Institutional CPC certificates aligned to UAS Industry needs.

Students who complete this program will be able to:

PLO 1: Integrate unmanned flights into the NAS safely and effectively utilizing industry-standard documentation methods, including FAA waivers.

PLO 2: Safely and effectively plan and execute field missions in a variety of situations utilizing current unmanned aircraft systems.

PLO 3: Design, assemble, build, program, and fly hobby and commercial grade unmanned equipment.

PLO 4: Work safely and effectively within a crew/team environment utilizing a variety of current unmanned aircraft and equipment.

PLO 5: Apply the principles of photography and videography in unmanned operations.

PLO 6: Utilize spatial data and GIS technology to create deliverable geospatial

products.

PLO 7: Effectively apply and utilize Crew Resource Management (CRM) and Aeronautical Decision-Making (ADM) strategies to ensure safe and effective UAS operations and procedures

PLO 8: Utilize effective and industry-standard UAS maintenance procedures, operations, and documentation.

Admission Information

There will be a separate program application submitted by the student to the Program Director, and approval is required to be enrolled in the Associates of Applied Science (A.A.S) in Aviation Unmanned Aircraft Systems. More information can be found here: <https://www.lanec.edu/programs-academics/academic-departments/aviation-academy>

Program Requirements

General Education

General Ed courses must be completed with a grade of C- or better, or Pass.

Writing (4 credits) - Complete one of the following:

- WR 115 - Introduction to College Composition 4 Credit(s)
- Any WR course higher than WR 115

Math (4 credits) - Complete the following:

- MTH 060 - Beginning Algebra 4 Credit(s)
- MTH 075 - Applied Algebra for Technicians 4 Credit(s)

Program Core Courses

Program Core courses must be completed with a grade of C- or better, or Pass.

AP 225 satisfies the Human Relations requirement.

- AP 127 - Aerodynamics 3 Credit(s)
- AP 225 - FOI & Human Factors 3 Credit(s)
- BA 101 - Introduction to Business 4 Credit(s)
- BA 254 - General Aviation Management 3 Credit(s)
- GS 109 - Meteorology 5 Credit(s)
- UAS 101 - Intro to UAS and Careers 1 Credit(s)
- UAS 121 - Multirotor Systems 3 Credit(s)
- UAS 122 - Ground Control Radio Systems 2 Credit(s)
- UAS 123 - UAS Part 107 License Lab 1 Credit(s)
- UAS 124A - Intro Flight Lab 1 Credit(s)
- UAS 124B - Advanced Operations Flight Lab 1 Credit(s)
- UAS 124C - Fixed Wing Lab 1 Credit(s)
- UAS 124D - UAS Field Operations 1 Credit(s)
- UAS 124E - Advanced Sensor Lab 1 Credit(s)
- UAS 124F - Professional Development 2 Credit(s)
- UAS 201 - UAS Ground School 5 Credit(s)
- UAS 210 - UAS Airframe Testing and Manufacture 5 Credit(s)
- UAS 211 - UAS Autopilot Ardupilot and Piccolo 3 Credit(s)
- UAS 212 - UAS Power Systems 5 Credit(s)
- UAS 213 - UAS Standards and Documentation 2 Credit(s)
- UAS 214 - UAS Avionics and Electrical Systems 4 Credit(s)
- UAS 215 - UAS Computer Aided Design/ Computer Aided Manufacture, Solidworks 4 Credit(s)
- UAS 230 - UAS Data Acquisition and Analysis 3 Credit(s)
- UAS 231 - Advanced Sensor 3 Credit(s)
- UAS 235 - Capstone Project 5 Credit(s)

Electives

Elective courses must be completed with a grade of C- or better, or Pass.

Option 1: Complete the following 12 credits:

- GIS 151 - Digital Earth 4 Credit(s)
- GIS 245 - GIS 1 4 Credit(s)
- GIS 246 - GIS 2 4 Credit(s)

Option 2: (11 credits) choose from the following list:

- CIS 101 - Computer Fundamentals 4 Credit(s)
- CIS 125A - Software Tools: App Development 4 Credit(s)
- CS 120 - Concepts of Computing: Information Processing 4 Credit(s)

- CS 160 - Orientation to Computer Science 4 Credit(s)
- DRF 160 - Computer-Aided Drafting and Design 4 Credit(s)
- DRF 245 - Solid Modeling 4 Credit(s)
- ET 129 - Electrical Theory 1 4 Credit(s)
- MUL 105 - Digital Photography 4 Credit(s)
- MUL 215 - Digital Photography 2 3 Credit(s)

Notes

- This program follows Associate of Applied Science (AAS) Requirements unless otherwise specified.
- This is the parent program for Aviation Unmanned Aircraft Systems: Aerial Photography, CPC, Aviation Unmanned Aircraft Systems: Autopilot, CPC, Aviation Unmanned Aircraft Systems: Commercial UAS Operator, CPC, Aviation Unmanned Aircraft Systems: GIS, CPC, and Aviation Unmanned Aircraft Systems: Maintenance, CPC.

Licensing and Certifications

- Students will be prepared to take the FAA Commercial UAS (Part 107) Pilot License exam after UAS 123
- FCC Amateur Technician Radio License obtained after UAS 122
- FAA Recreational UAS Operator Certificate after UAS 124A
- Students will be prepared to take the optional Pix4D Basic Certificate after UAS 230

Business Management, AAS

Length: 90 credits

Program Contacts

- Offered by the Business Department
- Program Coordinators: LuAnne Johnson (johnsonlm@lanec.edu, 541-463-5767) and Chris Culver (culverc@lanec.edu, 541-463-5153)
- Academic Advising: <https://www.lanec.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanec.edu
- Cooperative Education: <https://www.lanec.edu/programs-academics/internships-cooperative-education>

Estimated Cost: \$18,686

- Resident Tuition: \$11,925*
- Technology Fees: \$1,170
- General Student Fees: \$813**
- Online Course Fee: \$900 (if applicable)
- Books / Materials: \$2,078 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Other Cost / Expenses: \$1,800*** (if applicable for computer + internet)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanec.edu/costs-admission/tuition-fees-and-payments/credit-tuition>.

* Resident tuition is based on all program requirements (general education, core, directed electives). Any prerequisites required prior to the entry of the program will be listed separately.

** General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to prepare graduates for positions in management, sales and marketing, human resources, administration, and project management. The program includes electives to enable students to focus on one business area or develop a general background prior to assuming management positions.

Students who complete this program will be able to:

PLO 1 - Perform on the job in ways that reflect professional ethics, legal standards, and organizational expectations

PLO 2 - Use accounting and financial information to make informed and timely

planning and budgeting decisions to promote organizational goals
 PLO 3 - Utilize current software technologies, including word processing, spreadsheets, and document management systems to input, organize, create, and present professional documents, workpapers, and presentations for both internal and external users
 PLO 4 - Use research and analytical skills to gather and interpret data to support business decisions
 PLO 5 - Apply adaptive marketing, financial, managerial, and leadership theories in a business context
 PLO 6 - Demonstrate an understanding of the functions of leading, planning, organizing, and controlling in an organization

Program Requirements

General Education

General Ed courses must be completed with a grade of C- or better, or Pass.

Writing (4 credits):

- WR 121_H / WR 121 - Academic Composition 4 Credit(s)

Mathematics (8-9 credits) - Complete two courses:

- **Math Course #1 (4-5 credits) - Complete one of the following:**
 - MTH 098 - Math Literacy 5 Credit(s)
 - MTH 095 - Intermediate Algebra 5 Credit(s)
 - Any MTH course higher than MTH 095
- **Math Course #2 (4-5 credits) - Complete one of the following:**
 - MTH 105 - Math in Society 4 Credit(s)
 - Any MTH course higher than MTH 105

Health / PE / Dance (3 credits):

- Complete any Health (HE), Physical Education (PE, PEAT, PEO), or Dance (D) course or any combination of these courses.

Open Elective (1-3 credits):

- Complete any course(s) 100-level or higher to reach 90 credits. See Courses for options.

Program Core Courses

Program Core courses must be completed with a letter grade of C- or better. P/NP not accepted. BA 278 meets the Human Relations requirement.

- EL 121 - Effective Digital Learning 1-3 Credit(s) (complete 1 credit; recommended to take business focused section)
- BA 101 - Introduction to Business 4 Credit(s)
- BA 206 - Management Fundamentals 4 Credit(s)
- BA 214 - Business Communications 4 Credit(s)
- BA 223 - Marketing 4 Credit(s)
- BA 226 - Business Law 4 Credit(s)
- BA 278 - Leadership and Team Dynamics 4 Credit(s)
- BA 281 - Personal Finance 4 Credit(s)
- BT 108 - Business Proofreading and Editing 4 Credit(s)
- BT 120 - MS WORD for Business 4 Credit(s)
- BT 123 - MS EXCEL for Business 4 Credit(s)
- BT 291 - Operations Management 4 Credit(s)

Accounting (4 credits) - Complete one of the following:

- BA 211 - Financial Accounting 4 Credit(s)
- BT 165 - Introduction to the Accounting Cycle 4 Credit(s)

Economics (3 credits) - Complete one of the following:

- ECON 200 - Principles of Economics: Introduction to Economics 3 Credit(s)
- ECON 201 - Principles of Economics: Introduction to Microeconomics 3 Credit(s)
- ECON 202 - Principles of Economics: Introduction to Macroeconomics 3 Credit(s)

Cooperative Education

Cooperative Education and Seminar courses must be completed with a grade of C- or better. P/NP is not accepted.

Cooperative Education (5 credits) - Complete both of the following:

- Seminar - BT 206 - Co-op Ed: Business Seminar 2 Credit(s)
- Co-op Ed - BA 280AC - Co-op Ed: Accounting 3 Credits

Directed Electives

Directed Electives must be completed with a letter grade of C- or better. P/NP not accepted. **14-16 credits; choose one group of electives.** Students may also choose to mix and match from different lists. Please see your Academic Advisor for more information.

Small Business Management

By completing all the courses within Small Business Management group, students would qualify to apply for the Business Management: Small Business Ownership, CPC.

- BA 250 - Small Business Management 4 Credit(s)
- BT 150 - Business Web Pages with WordPress 3 Credit(s)
- BT 163 - QuickBooks 4 Credit(s)
- BT 221 - Budgeting for Managers 4 Credit(s)

Sales and Marketing

- BA 238 - Sales 3 Credit(s)
- BT 150 - Business Web Pages with WordPress 3 Credit(s)
- BT 181 - Customer Service 4 Credit(s)
- BT 253 - Digital Marketing 4 Credit(s)

Data Specialist

- BT 223 - MS EXCEL for Business-Expert 4 Credit(s)
- CS 175 - Introduction to SQL (Structured Query Language) 4 Credit(s)
- CIS 275E - Data Exploration and Visualization 4 Credit(s)
- MTH 243 - Introduction to Probability and Statistics 4 Credit(s)

Project Management

- BT 230 - Sustainable Paperless Practices 4 Credit(s)
- BT 221 - Budgeting for Managers 4 Credit(s)
- BT 270 - Project Management 4 Credit(s)
- COMM 218 - Interpersonal Communication 4 Credit(s)

Human Resources

- BT 170 - Payroll Records and Accounting 4 Credit(s)
- BA 224 - Human Resource Management 4 Credit(s)
- BT 230 - Sustainable Paperless Practices 4 Credit(s)
- **Complete one of the following:**
- CG 203 - Human Relations at Work 1-3 Credit(s)
- COMM 260 - Introduction to Conflict Management 4 Credit(s)
- COMM 285 - Mediated Communication 4 Credit(s)

Notes

- This program follows Associate of Applied Science (AAS) Requirements unless otherwise specified.
- These courses may only be offered once per year. Check with the department for course schedule. BA 224; BA 250; BT 170; BT 181; BT 221; BT 270; BT 291.
- BT 206 - Co-op Ed: Business Seminar is preferred. Students may substitute the online seminar course COOP 206 for BT 206.

Computer Network Operations, AAS

Length: 90 credits

Program Contacts

- Offered by the Computer and Information Technology department
- Program Coordinator: Joseph Colton, coltonj@lanecc.edu, 541-463-5249
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

- Cooperative Education: <https://www.lanec.edu/programs-academics/internships-cooperative-education>

Estimated Cost: \$17,674

- Resident Tuition: \$11,925*
- Technology Fees: \$1,170
- General Student Fees: \$813**
- Online Course Fee: \$900 (if applicable)
- Books / Materials: \$210 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$156 (data fee)
- Other Cost / Expenses: \$2,500*** (if applicable for Computer + Internet)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanec.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to train entry-level network support technicians and more advanced network administrators in specific computer networking skills and general troubleshooting of hardware and software related problems.

Students who complete this program will be able to:

PLO 1 - Explain established and emerging network technologies

PLO 2 - Access and utilize remote network resources with various software and hardware

PLO 3 - Build and configure Windows and Linux clients and servers

PLO 4 - Design, build, and optimize IP networks using routers, switches, and other network appliances

PLO 5 - Design, implement, test, and debug programs using one or more relevant programming language(s)

PLO 6 - Design and configure computer systems and networks with attention to current security needs

Program Requirements

General Education

General Ed courses must be completed with a letter grade of C- or better, or Pass.

Writing (4 credits) - Complete one of the following:

- WR 115 - Introduction to College Composition
- WR 121 - Academic Composition (or WR 121_H) (Recommended)
- Any Writing course higher than WR 121

Math (4-5 credits) - Complete one of the following:

- MTH 082 - Math for Network Operations 4 Credit(s)
- MTH 095 - Intermediate Algebra 5 Credit(s)
- Any Math course higher than MTH 095

Human Relations (3-4 credits) - Complete one of the following:

- BA 278 - Leadership and Team Dynamics 4 Credit(s)
- CG 100 - College Success 1-3 Credit(s)
- CG 203 - Human Relations at Work 1-3 Credit(s)
- COMM 130 - Business and Professional Communication 4 Credit(s)
- COMM 218 - Interpersonal Communication 4 Credit(s)
- COMM 219 - Small Group Communication 4 Credit(s)
- COMM 260 - Introduction to Conflict Management 4 Credit(s)
- COMM 296 - Communication in Healthcare Settings 4 Credit(s)

Open Elective (13 credits):

- Complete any 100- or 200-level courses to meet this requirement

Program Core Courses

Program Core courses must be completed with a letter grade of C- or better. P/NP is not accepted, with the exception of CIS 100, CS 179, CS 189, and CS 279, which may be completed with a Pass grade.

- CIS 100 - Computing Careers Exploration 1 Credit(s)
- CIS 140U - Introduction to Unix/Linux 4 Credit(s)
- CS 179 - Introduction to Computer Networks 4 Credit(s)
- CS 189 - Routing and Switching Essentials 4 Credit(s)
- CS 240U - Advanced Unix/Linux: Server Management 4 Credit(s)
- CS 240W - Advanced Windows: Server Management 4 Credit(s)
- CS 273 - Introduction to Virtualization and Cloud Computing 4 Credit(s)
- CS 275 - Basic Database SQL 4 Credit(s)
- CS 279 - Scaling Networks 4 Credit(s)
- CS 284 - Network Security Fundamentals 4 Credit(s)
- CS 288 - Network Monitoring and Management 4 Credit(s)

Programming Sequence

Programming courses must be completed with a letter grade of C- or better. P/NP is not accepted. Complete two courses including an introductory and advanced course.

Introductory Programming (4 credits) - Complete one of the following:

- CS 161P - Computer Science 1 4 Credit(s) (Python) (Recommended)
- CS 161C - Computer Science 1 4 Credit(s) (C++)
- CS 161N - Computer Science 1 4 Credit(s) (C#)
- CS 133JS - Beg. Programming: JavaScript 4 Credit(s)

Advanced Programming (4 credits) - Complete one of the following:

- CS 233S - Python for Systems Administrators 4 Credit(s) (Recommended)
- CS 162P - Computer Science 2 4 Credit(s) (Python)
- CS 162C - Computer Science 2 4 Credit(s) (C++)
- CS 162N - Computer Science 2 4 Credit(s) (C#)
- CS 233JS - Intermediate Programming: JavaScript 4 Credit(s)

Cooperative Education

Cooperative Education must be completed with a letter grade of C- or better.

P/NP is not accepted. **Seminar** must be completed with a grade of C- or better, or Pass. **Complete 3 credits of Cooperative Education.**

- CS 206 - Co-op Ed: Computer Info Technology Seminar 2 Credit(s)
- CS 280CN - Co-op Ed: Computer Network Operations 3-12 Credit(s)

Program Electives

Program Electives must be completed with a letter grade of C- or better. P/NP is not accepted. **Complete 12 credits from the following:**

- Recommended:
 - CIS 140W - Introduction to Operating Systems: Windows Clients 4 Credit(s)
 - CS 188 - Wireless Networking 4 Credit(s)
 - CS 285 - Cybersecurity Operations 4 Credit(s)
 - CS 286 - Firewalls and VPNs 4 Credit(s)
 - CS 290 - Ethical Hacking Fundamentals 4 Credit(s)
- And/or choose courses from any of the following subjects:
 - CS - Computer Science
 - CIS - Computer Information Systems
 - MTH - Mathematics (MTH 025 or higher)

Notes

- This program follows Associate of Applied Science (AAS) Requirements unless otherwise specified.
- This is the parent program for the Computer Network Monitoring and Management, CPC.
- Students using lower-credit courses to meet General Education requirements may need to take additional Electives to meet the 90-credit minimum.

- First-year students: A personal laptop is strongly recommended for students in this program. Please contact the Program Coordinator for options and system requirements.
- Co-op is a required and important part of the Computer Network Operations program. It provides relevant field experience that integrates theory and practice while providing opportunities to develop skills, explore career options, and network with professionals and employers in the computer network field. Contact Gerry Meenaghan, Cooperative Education Coordinator, Bldg. 19, Rm. 154, 541.463.5883
- Students planning to pursue a bachelor's degree in Computer Science are advised to also complete the following courses in mathematics: MTH 111, MTH 231, MTH 232, and MTH 260.
- Students who have a CCNA certificate can get credit for the following courses: CS 179, CS 189, CS 279. Contact Program Coordinator for information.
- Computer programming languages: Students who complete more than one CS 161 or CS 162 programming language course should be aware that transfer institutions may count multiple 161 or 162 courses as repeats, **and may not accept them in transfer**. Students wishing to complete multiple programming courses should first take a CS 161/162 series and then enroll in CS 133/233 course series for any subsequent programming languages.

Computer Programming, AAS

Length: 90 credits

Program Contacts

- Offered by the Computer and Information Technology department
- Program Coordinator: Brian Bird, birdb@lanec.edu, 541-463-3024
- Academic Advising: <https://www.lanec.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanec.edu
- Cooperative Education: <https://www.lanec.edu/programs-academics/internships-cooperative-education>

Estimated Cost: \$17,925

- Resident Tuition: \$1,925*
- Technology Fees: \$1,170
- General Student Fees: \$813**
- Online Course Fee: \$900 (if applicable)
- Books / Materials: \$461 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.
- Program Specific Fees: \$156 (data fee)
- Other Cost / Expenses: \$2,500*** (if applicable for Computer + Internet)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanec.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to prepare technicians for entry-level positions as software developers.

Students who complete this program will be able to:

PLO 1 - Design, implement, test, debug and document web based computer programs using a variety of current tools and technologies

PLO 2 - Design, implement, test, debug and document at least one other type of computer program such as: game program, database program, object-oriented program

PLO 3 - Explain and model the relationship between computer programs and

organizational processes

PLO 4 - Interpret the mathematical concepts of a programming related problem-solving task and translate them into programming logic and expressions

PLO 5 - Use appropriate library and information resources to research programming tools and technologies and support lifelong technical learning

Program Requirements

General Education

General Ed courses must be completed with a grade of C- or better, or Pass.

Writing (8 credits) - Complete both of the following:

- WR 121 - Academic Composition (or WR 121_H)
- WR 227 - Technical Writing (or WR 227_H)

Math (4-5 credits) - Complete one of the following:

- MTH 095 - Intermediate Algebra 5 Credit(s)
- MTH 111 - College Algebra 5 Credit(s)
- MTH 112 - Trigonometry 5 Credit(s)
- or any 200-level MTH course (MTH 243 not accepted)

Human Relations (3-4 credits) - Complete one of the following:

- BA 278 - Leadership and Team Dynamics 4 Credit(s)
- CG 100 - College Success 1-3 Credit(s)
- CG 203 - Human Relations at Work 1-3 Credit(s)
- COMM 130 - Business and Professional Communication 4 Credit(s)
- COMM 218 - Interpersonal Communication 4 Credit(s)
- COMM 219 - Small Group Communication 4 Credit(s)
- COMM 260 - Introduction to Conflict Management 4 Credit(s)
- COMM 296 - Communication in Healthcare Settings 4 Credit(s)

Open Elective (3+ credits):

- Complete any course(s) 100-level or higher to reach 90 credits. See Courses for options.

Program Core Courses

All of the following courses must be completed with a letter grade of B- or better. P/NP is not accepted.

- CS 161N - Computer Science 1 4 Credit(s)
- CS 162N - Computer Science 2 4 Credit(s)
- CS 234N - Advanced Programming: C# 4 Credit(s)
- CS 246 - System Design 4 Credit(s)
- CS 295N - Web Development 1: ASP.NET 4 Credit(s)
- CS 296N - Web Development 2: ASP.NET 4 Credit(s)
- CS 297 - Programming Capstone 4 Credit(s)

All of the following courses, except CIS 100, must be completed with a letter grade of C- or better. P/NP is not accepted. CIS 100 may be completed with a Pass grade.

- CIS 100 - Computing Careers Exploration 1 Credit(s)
- CIS 195 - Web Authoring 1 4 Credit(s)
- CS 133JS - Beg. Programming: JavaScript 4 Credit(s)
- CS 233JS - Intermediate Programming: JavaScript 4 Credit(s)
- CS 275 - Basic Database SQL 4 Credit(s)
- CS 276 - Database Systems and Modeling 4 Credit(s)

Complete one of the following:

- CS 160 - Orientation to Computer Science 4 Credit(s) (recommended)
- CIS 125A - Software Tools: App Development 4 Credit(s) (recommended)
- CIS 125D - Software Tools 1: Databases 4 Credit(s)
- CIS 125G - Software Tools 1: Game Development 4 Credit(s)

Cooperative Education

Seminar must be completed with a grade of C- or better, or Pass.

- CS 206 - Co-op Ed: Computer Information Technology Seminar 2 Cr

Cooperative Education must be completed with a letter grade of C- or better.

P/NP is not accepted. **Complete 4 credits of Cooperative Education.**

- CS 280PR - Co-op Ed: Computer Programming 3-12 Credit(s)

Program Electives

Program Electives must be completed with a letter grade of C- or better. P/NP is not accepted. **Complete 12 credits from the following list:**

- ART 288 - Introduction to Web Design and Social Media 3 Credit(s)
- CIS 140U - Introduction to Unix/Linux 4 Credit(s)
- CS 240U - Advanced Unix/Linux: Server Management 4 Credit(s)
- CS 260 - Data Structures 1 4 Credit(s)
- CIS 275E - Data Exploration and Visualization 4 Credit(s)
- CS 295R - Web Development 1: React 4 Credit(s)

Computer Programming

Students may use additional programming languages (161/162 or 133/233) to fulfill electives.

- CS 133C - Beginning Programming: C++ 4 Credit(s)
- CS 233C - Intermediate Programming: C++ 4 Credit(s)
- CS 133P - Beginning Programming: Python 4 Credit(s)
- CS 233P - Intermediate Programming: Python 4 Credit(s)

Students who complete more than one CS 161 or CS 162 programming language course should be aware that transfer institutions may count multiple 161 or 162 courses as repeats, **and may not accept them in transfer**. Students wishing to complete multiple programming courses should first take a CS 161/162 series and then enroll in CS 133/233 course series for any subsequent programming languages.

Note - cannot mix programming sequences (i.e. CS 133C and 233P)

Notes

- This is the parent program for the Computer Programming: Database Specialist, CPC and Computer Programming: Front End Web Development, CPC.
- Students who complete the Computer Programming Degree will have completed all of the coursework to earn the Computer Programming: Database Specialist, CPC and the Computer Programming: Front End Web Development, CPC.
- This program follows the Associate of Applied Science (AAS) Requirements unless otherwise specified.
- Second-year requirements: A personal laptop is recommended for second-year students in the degree program. Please contact the Program Coordinator for options and system requirements.
- For more specific information about the Fall/Winter/Spring CS/CIS elective sequences please contact the Program Coordinator to help determine which elective sequence best fits your goals.

Certifications

By completing CS 275 and CS 276 students can take the Oracle Certified Foundations Associate Exam.

Construction Technology, AAS

Length: 90 credits

Program Contacts

- Offered by: Advanced Technology
- Program Coordinator: Paul Rea, rea@lanecc.edu, 541-463-5504
- Academic Advising: <https://www.lanecc.edu/advising/contact>; 541-463-3800; academicadvising@lanecc.edu
- Cooperative Education: <https://www.lanecc.edu/programs-academics/internships-cooperative-education>

Estimated Cost: \$14,885

- Resident Tuition: \$11,925*
- Technology Fees \$1,170
- General Student Fees: \$813**
- Online Course Fee: \$170 (if applicable)
- Books / Course Materials: \$567 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$240.00 (course fees, materials)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>.

* Resident tuition is based on all program requirements (general education, core, directed electives). Any prerequisites required prior to the entry of the program will be listed separately.

** General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to train students in the technical skills and knowledge of the construction industry. The graduate of this program can expect to work in the residential and commercial building construction field.

Students who complete this program will be able to:

- PLO 1 - Cut, fit, and assemble wood and other materials for building construction
- PLO 2 - Recognize and explain the importance of the relationships among building components in the process of assembling a structure
- PLO 3 - Demonstrate and use industry safety standards
- PLO 4 - Use blueprint reading skills necessary to the profession
- PLO 5 - Establish field elevations and develop building layouts through the use of various surveying tools
- PLO 6 - Use appropriate library and information resources to research professional issues
- PLO 7 - Use mathematics and interpretive skills to solve construction problems
- PLO 8 - Acknowledge the various areas of the construction industry and explain how different occupations integrate into the field as a whole

Program Requirements

General Education

General Ed courses must be completed with a grade of C- or better, or Pass.

Writing (3-4 credits) - Complete one of the following:

- WR 115W - Introduction to College Writing: Workplace Emphasis
- WR 115 - Introduction to College Composition
- Any WR course higher than WR 115

Math (4-5 credits) - Complete one of the following:

- MTH 085 - Applied Geometry for Technicians
- MTH 097 - Geometry
- MTH 112 - Trigonometry

Human Relations (3-4 credits) - Complete one of the following:

- BA 278 - Leadership and Team Dynamics
- CG 100 - College Success
- CG 203 - Human Relations at Work
- COMM 130 - Business and Professional Communication
- COMM 218 - Interpersonal Communication
- COMM 219 - Small Group Communication
- COMM 260 - Introduction to Conflict Management 4 Credit(s)
- COMM 296 - Communication in Healthcare Settings 4 Credit(s)

Health/PE/Dance (3 credits): Complete any Health (HE), Physical Education (PE, PEAT, PEO), or Dance (D) course or any combination of these courses.

Open Elective (6 credits): Complete any 100- or 200-level courses to meet this requirement.

Program Core Courses

Program Core courses must be completed with a grade of C- or better, or Pass. Students must complete 5 credits each of CST 118A, 118B and 118C for a total of 15 credits.

- CS 120 - Concepts of Computing: Information Processing 4 Credit(s)
- CST 110 - Blueprint Reading 1 3 Credit(s)
- CST 111 - Construction Orientation and Environment 2 Credit(s)
- CST 116 - Construction Estimating 4 Credit(s)
- CST 118A - Building Construction A 1 to 5 Credit(s)

- CST 118B - Building Construction B 1 to 5 Credit(s)
- CST 118C - Building Construction C 1 to 5 Credit(s)
- CST 119 - Building Construction Surveying 3 Credit(s)
- CST 122 - Construction Codes 2 Credit(s)
- CST 211 - Blueprint Reading 2 3 Credit(s)
- DRF 160 - Computer-Aided Drafting and Design 4 Credit(s)
- DRF 137 - Architectural Plans 4 Credit(s) or DRF 211 - Sustainable Building Systems

Cooperative Education

Complete 9 credits of CST 280 - Co-op Ed: Construction

Program Electives

Program Electives must be completed with a grade of C- or better, or Pass.

Complete 18 credits from the Advanced Technology Directed Elective List below.

Advanced Technology Directed Elective List

Some courses in the list below may already appear as requirements in some programs. In these instances, they cannot be taken twice nor counted in two areas. Please choose different electives. The courses that are program core courses are notated in the list as:

C = required in Construction

Dr = required in Drafting

Dt = required in Diesel Technology

- APR 101 - Trade Skills Fundamentals 4 Credit(s)
- APR 105 - Electrical Wiring for the Trades 4 Credit(s)
- APR 106 - Plumbing Trade Introduction 2 Credit(s)
- ART 117 - Basic Design: 3-Dimensional 3 Credit(s)
- ART 216 - Digital Design Tools 3 Credit(s)
- BA 101 - Introduction to Business 4 Credit(s)
- BT 165 - Introduction to the Accounting Cycle 4 Credit(s)
- CH 150 - Preparatory Chemistry 3 Credit(s)
- CIS 140W - Introduction to Operating Systems: Windows Clients 4 Credit(s)
- CIS 195 - Web Authoring 1 4 Credit(s)
- COOP 206 - Co-op Ed: Internship Seminar 1-2 Credit(s) ^{Dr}
- CS 120 - Concepts of Computing: Information Processing 4 Credit(s)
- CS 179 - Introduction to Computer Networks 4 Credit(s)
- CST 110 - Blueprint Reading 1 3 Credit(s) ^C
- CST 111 - Construction Orientation and Environment 2 Credit(s) ^C
- CST 116 - Construction Estimating 4 Credit(s) ^C
- CST 118 - Building Construction 1-5 Credit(s) ^C
- CST 119 - Building Construction Surveying 3 Credit(s) ^C
- CST 201 - Sustainable Building Practices 3 Credit(s)
- CST 211 - Blueprint Reading 2 3 Credit(s) ^C
- DRF 160 - Computer-Aided Drafting and Design 4 Credit(s)
- DRF 205 - Drafting: Structures 4 Credit(s) ^{C,D Dr}
- DRF 207 - Drafting: Strength of Materials 4 Credit(s) ^{Dr}
- DRF 210 - Commercial Buildings 4 Credit(s) ^{Dr}
- DRF 220 - Building Information Modeling 4 Credit(s) ^{Dr}
- DS 154 - Heavy Duty Braking Systems 1-12 Credit(s) ^{Dt}
- DS 257 - Diesel Electrical Systems 1-12 Credit(s) ^{Dt}
- DS 259 - Diesel Engines and Engine Overhaul 1-12 Credit(s) ^{Dt}
- ET 129 - Electrical Theory 1 4 Credit(s)
- ET 130 - Electrical Theory 2 1-4 Credit(s)
- G 101 - Earth's Dynamic Interior 4 Credit(s) or G 102, G 103, G 146
- GIS 151 - Digital Earth 4 Credit(s)
- GIS 245 - GIS 1 4 Credit(s)
- HE 152 - Drugs, Society and Behavior 3 Credit(s)
- HE 252 - First Aid 3 Credit(s)
- MFG 101 - Safety and Basic Shop Practice 3 Credit(s) ^{Dt}
- MTH 060 - Beginning Algebra 4 Credit(s)

- MTH 075 - Applied Algebra for Technicians 4 Credit(s)
- MTH 085 - Applied Geometry for Technicians 4 Credit(s)
- MTH 095 - Intermediate Algebra 5 Credit(s)
- MUL 101 - Introduction to Media Arts 3 Credit(s)
- MUL 212 - Digital Imaging 4 Credit(s)
- NRG 121 - Air Conditioning System Analysis 3 Credit(s)
- NRG 124 - Energy Efficiency Methods 4 Credit(s)
- PH 101 - Fundamentals of Physics 4 Credit(s) or PH 102, PH 103, PH 201, PH 202, PH 203
- RTEC 105 - Introduction to Advanced Technology 3 Credit(s)
- SPAN 101 - Spanish, First-Year 5 Credit(s) or SPAN 102, SPAN 103, SPAN 201, SPAN 202, SPAN 203
- WATR 101 - Introduction to Water Resources 3 Credit(s)
- WLD 111 - Blueprint Reading for Welders 3 Credit(s)
- WLD 121 - Shielded Metal Arc Welding 1 (stick welding) 1-4 Credit(s) ^{Dt}
- WLD 122 - Shielded Metal Arc Welding 2 (stick welding) 1-4 Credit(s) ^{Dt}
- WLD 139 - Welding Lab 1-3 Credit(s)
- WLD 140 - Welder Qualification (Cert): Wire Drive Processes 3 Credit(s)
- WLD 141 - Welder Qualification (Cert): SMAW 3 Credit(s)
- WLD 143 - Wire Drive Welding 1 1-4 Credit(s) ^{Dt}
- WLD 151 - Fundamentals of Metallurgy 1-3 Credit(s)
- CST 298 - Independent Study: Construction 1-12 Credit(s) (instructor approval only)
- DRF 298 - Independent Study: Drafting 1-12 Credit(s) (instructor approval only)

Notes

- This program is the parent program for the Construction Technology, 1-yr Certificate
- This program follows the Associate of Applied Science (AAS) Requirements unless otherwise specified.
- A high school diploma or equivalent is recommended for all applicants to this program.
- Cooperative Education (Co-op): In certain circumstances, Co-op experience may be substituted for major coursework. For more information, please see an Academic Advisor or the Program Coordinator.
- This program is articulated with Oregon Institute of Technology, which requires a higher-level math course than is required for the program. Contact your Academic Advisor for help with transfer to OIT.

Construction Trades, General Apprenticeship, AAS

Length: 90 credits

Program Contacts

- Offered by Advanced Technology
- Program Coordinator: Joy Crump, crumpj@lanecc.edu, 541-463-5496
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Estimated Cost: \$13,846

- Resident Tuition: \$9,010*
- Technology Fees: \$884
- General Student Fees: \$1,627** (if applicable)
- Online Course Fee: \$110
- Books / Course Materials: \$1,865 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$350 (Additional Welding, Construction and Apprenticeship class fees)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanec.edu/costs-admission/tuition-fees-and-payments/credit-tuition>.

* Resident tuition is based on all program requirements (general education, core, directed electives). Any prerequisites required prior to the entry of the program will be listed separately.

** General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to provide a structured system of training in construction trades or occupations, leading to certification and journey-level status, only for apprentices who are sponsored by individual employers, accepted by a Joint Apprenticeship Training Committee, and registered with the State of Oregon Bureau of Labor and Industries.

Students who complete this program will be able to:

PLO 1 - Perform the duties and responsibilities of the individual construction trade/occupation

PLO 2 - Apply theory as it relates to trade competencies

PLO 3 - Demonstrate and use industry safety standards

PLO 4 - Utilize recognized standard building codes guidelines as applicable

PLO 5 - Prepare and utilize isometric sketching and detailed drawings per individual trade

PLO 6 - Develop attitudes conducive to improved customer relations skills in the construction trades

PLO 7 - Demonstrate communication and critical thinking skills necessary for job advancement

PLO 8 - Use appropriate library and information resources to research professional issues and support lifelong learning

PLO 9 - Access library, computing, and communications services, and appropriately select information and data from regional, national, and international networks

PLO 10 - Represent, analyze and determine rules for finding patterns relating to linear functions, non-linear functions and arithmetic sequences with tables, graphs, and symbolic rules

PLO 11 - Adapt to new job requirements to qualify for advancement in becoming lead supervisors

Admission Information

Students must be registered apprentices with the State of Oregon Bureau of Labor and Industries (BOLI) and accepted by a Joint Apprenticeship Training Committee. Information is available at boli.state.or.us.

Program Requirements

General Education

General Ed courses must be completed with a grade of C- or better, or Pass.

Writing (4 credits):

- WR 115 - Introduction to College Composition 4 Credit(s) or higher

Mathematics (4 credits):

- MTH 060 - Beginning Algebra 4 Credit(s) or higher

Human Relations (3-4 credits) - Complete one of the following:

- BA 278 - Leadership and Team Dynamics 4 Credit(s)
- CG 100 - College Success 1-3 Credit(s)
- CG 203 - Human Relations at Work 1-3 Credit(s)
- COMM 130 - Business and Professional Communication 4 Credit(s)
- COMM 218 - Interpersonal Communication 4 Credit(s)
- COMM 219 - Small Group Communication 4 Credit(s)
- COMM 260 - Introduction to Conflict Management 4 Credit(s)
- COMM 296 - Communication in Healthcare Settings 4 Credit(s)

Program Core Courses

Complete all courses listed in one of the following trades. Program Core courses must be completed with a letter grade of C or better. P/NP is not accepted.

Carpenter (36 credits)

- APR 115 - Carpentry Skill Fundamentals 3 Credit(s)
- APR 116 - Carpentry Framing Fundamentals 3 Credit(s)
- APR 117 - Carpentry Framing and Introduction to Concrete 3 Credit(s)
- APR 118 - Carpentry Framing and Finishing 3 Credit(s)
- APR 119 - Carpentry Commercial Plans and Exterior Finish 3 Credit(s)
- APR 120 - Carpentry Interior Finish 3 Credit(s)
- APR 201 - Carpentry Basic Rigging and Practices 3 Credit(s)
- APR 202 - Carpentry Concrete Practices 3 Credit(s)
- APR 203 - Carpentry Forms and Tilt-up Panels 3 Credit(s)
- APR 204 - Carpentry Advanced Layout and Building Systems 3 Credit(s)
- APR 205 - Carpentry Advanced Planning and Management 3 Credit(s)
- APR 206 - Carpentry Equipment and Site Layout 3 Credit(s)

Glazier (25 credits)

- APR 101 - Trade Skills Fundamentals 4 Credit(s)
- CST 110 - Blueprint Reading 1 3 Credit(s)
- CST 211 - Blueprint Reading 2 3 Credit(s)
- MTH 075 - Applied Algebra for Technicians 4 Credit(s)
- MTH 085 - Applied Geometry for Technicians 4 Credit(s)
- NRG 111 - Residential/Light Commercial Energy Analysis 3 Credit(s)
- WLD 121 - Shielded Metal Arc Welding 1 (stick welding) 1-4 Credit(s) (Must complete 4 credits in Glazier program)

HVAC Technician/Installer (44 credits)

- APR 101A - Trade Skills Fundamentals 4 Credit(s)
- APR 140 - Electrical Systems Installation Methods 4 Credit(s)
- APR 141 - Limited Voltage Electrical Circuits 4 Credit(s)
- APR 142 - Devices, Testing Equipment and Code 4 Credit(s)
- APR 143 - Limited Voltage Cabling 4 Credit(s)
- APR 144 - Communications 4 Credit(s)
- APR 190 - Electrical Theory 1 1-4 Credit(s) (take 4cr of APR 190)
- APR 210 - HVAC Systems 1 4 Credit(s)
- APR 211 - HVAC Systems 2 4 Credit(s)
- APR 212 - HVAC Systems 3 4 Credit(s)
- APR 213 - HVAC Systems 4 4 Credit(s)

Plumber (40 credits)

- APR 160 - Plumbing Skill Fundamentals 4 Credit(s)
- APR 161 - Plumbing Materials and Fixtures 4 Credit(s)
- APR 162 - Plumbing Basic Waste Water Systems 2 Credit(s)
- APR 163 - Plumbing Calculations and Print Reading 4 Credit(s)
- APR 164 - Plumbing Basic Installation 1 4 Credit(s)
- APR 165 - Plumbing Basic Installation 2 2 Credit(s)
- APR 260 - Plumbing Water Supply Systems 4 Credit(s)
- APR 261 - Plumbing Piping Sizing and Systems 4 Credit(s)
- APR 262 - Plumbing Advanced Waste Systems 2 Credit(s)
- APR 263 - Plumbing Code and Test Preparation 2-4 Credit(s) (take 10 credits of APR 263)

Sheet Metal Worker (45 credits)

- APR 101A - Trade Skills Fundamentals 4 Credit(s)
- APR 170 - Introduction to Sheet Metal Apprenticeship 4 Credit(s)
- APR 171 - Sheet Metal Basic Layout 4 Credit(s)
- APR 173 - Sheet Metal Formulas 4 Credit(s)
- APR 270 - Architectural Sheet Metal 4 Credit(s)
- APR 271 - Sheet Metal Building Codes and Installation 4 Credit(s)
- APR 272 - Sheet Metal Duct Design 4 Credit(s)
- APR 273 - General Sheet Metal Fabrication 4 Credit(s)
- APR 274 - Sheet Metal Shop Fabrication 4 Credit(s)
- APR 275 - Sheet Metal Project Supervision 4 Credit(s)
- CST 110 - Blueprint Reading 1 3 Credit(s)
- Wire Drive Welding (2 credits). Complete one course:**
 - APR 186 - Wire Drive Welding 1 1-4 Credit(s)
 - WLD 143 - Wire Drive Welding 1 1-4 Credit(s)

Program Electives

Program Electives must be completed with a grade of C- or better, or Pass. Elective credits will be different depending on which trade students choose to pursue. Complete credits to meet 90 total credits for the program. Select courses from the list below. Contact your Academic Advisor or Program Coordinator for help determining the number of elective credits required.

- APR 101 - Trade Skills Fundamentals 4 Credit(s)
- APR 106 - Plumbing Trade Introduction 2 Credit(s)
- BA 101 - Introduction to Business 4 Credit(s)
- CS 120 - Concepts of Computing: Information Processing 4 Credit(s)
- CST 110 - Blueprint Reading 1 3 Credit(s)
- CST 111 - Construction Orientation and Environment 2 Credit(s)
- CST 116 - Construction Estimating 4 Credit(s)
- CST 118 - Building Construction 1-5 Credit(s)
- CST 119 - Building Construction Surveying 3 Credit(s)
- CST 211 - Blueprint Reading 2 3 Credit(s)
- HE 152 - Drugs, Society and Behavior 3 Credit(s)
- HE 252 - First Aid 3 Credit(s)
- MTH 085 - Applied Geometry for Technicians 4 Credit(s)
- MTH 095 - Intermediate Algebra 5 Credit(s)
- NRG 121 - Air Conditioning System Analysis 3 Credit(s)
- NRG 124 - Energy Efficiency Methods 4 Credit(s)
- WATR 101 - Introduction to Water Resources 3 Credit(s)
- WLD 121 - Shielded Metal Arc Welding 1 (stick welding) 1-4 Cr
- WLD 122 - Shielded Metal Arc Welding 2 (stick welding) 1-4 Cr
- WLD 139 - Welding Lab 1-3 Credit(s)
- WLD 143 - Wire Drive Welding 1 1-4 Credit(s)
- Any course(s), 100-level or higher, selected from the Approved Discipline Studies Courses for Associate Degrees and Oregon Transfer Module lists.

Journey Level Card from Oregon BOLI (22 credits)

Students who obtain a State of Oregon Apprenticeship Training Journey Level Card or Oregon Bureau of Labor and Industries Apprenticeship and Training Division (BOLI-ATD) Certificate of Completion will be awarded 22 Credits.

Notes

- This program follows Associate of Applied Science (AAS) Requirements.
- This is the parent program for the Construction Trades, General Apprenticeship: Trade Worker Apprenticeship Technologies, CPC.
- Complete 8000 hours State of Oregon-approved on-the-job training and provide a State of Oregon Apprenticeship Training Journey-level card or BOLI-ATD Certificate of Completion.
- This program is articulated with Oregon Institute of Technology, which requires a higher-level math course than is required for the program. Contact your Academic Advisor for help with transfer to OIT.
- Students using lower-credit courses to meet General Education requirements may need to take additional Electives to meet the 90-credit minimum.

Licensing and Certification

An apprenticeship "Award of Completion" issued by the Oregon Bureau of Labor and Industries Apprenticeship and Training Division certifies that an individual has been trained in all aspects of an occupation and has met the requirements for program completion. This certificate is recognized throughout Oregon and industry-wide as a valid indicator of high quality, standardized training, and it provides on-the-job training documentation for community college credit. In addition, the Oregon community college Construction Trades, General Apprenticeship pathway provides statewide transfer opportunities, ladder certificates of completion, and an optional transfer path into Oregon Institute of Technology Bachelor of Science degree in Operations Management or Bachelor

of Applied Science degree in Technology and Management. The Construction Trades, General Apprenticeship pathway includes an advising guide with a set of recommended courses that satisfy both the AAS degree and the Oregon Transfer Module (OTM). Students who complete the recommended set of OTM courses may apply for 45 credits of guaranteed block transfer to any other community college. Licensing or Other Certification: HVAC technician/installer and plumber trades require successful completion of trade-specific licensure examinations through the Oregon Building Codes Division.

Criminal Justice, AAS

Length: 90 credits

Program Contacts

- Offered by the Social Science Division
- Program Coordinator: Caoimhin OFearghail, ofearghailc@lanecc.edu, 541-463-5361
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu
- Cooperative Education: <https://www.lanecc.edu/programs-academics/internships-cooperative-education>

Estimated Cost: \$16,763

- Resident Tuition: \$11,925*
- Technology Fee: \$1,170
- General Student Fees: \$813**
- Online Course Fees: \$210 (if applicable)
- Books/Course Materials: \$2,625 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$20

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>.

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to offer preparation for career employment in law enforcement, adult and juvenile corrections, security management, and other public service careers. Transferable to four-year colleges and universities, the program is also job entry oriented, depending on the student needs. Public safety careers require criminal and personal background checks.

Students who complete this program will be able to:

- PLO 1 - Apply theories of crime and criminal behavior to describe crime and deviance at individual, community, and societal levels
- PLO 2 - Discuss and apply the established practices and methods of criminal investigation
- PLO 3 - Explain the philosophy, organization, and function of the criminal justice system and justice processes
- PLO 4 - Analyze criminal justice issues through the perspective of differing theories and/or disciplines
- PLO 5 - Locate and navigate information resources and apply the information to specific professional criminal justice contexts
- PLO 6 - Evaluate the influence of humanistic philosophies and principles on the nature and development of substantive and procedural criminal law in the United States

Program Requirements

General Education

General Education courses must be completed with a letter grade of C- or better, or Pass. Only one BI 101, BI 102, and BI 103 will count toward the completion of this degree.

Writing (8 credits) - Complete both of the following:

- WR 121 - Academic Composition or WR 121_H
- WR 122 - Argument, Research and Multimodal Composition or WR 122_H

Math (4-5 credits) - Complete one of the following:

- MTH 105 - Math in Society 4 Credit(s)
- or higher-level Math course

Health (3 credits) - Complete one of the following:

- HE 250 - Personal Health
- HE 252 - First Aid
- HE 275 - Lifetime Health and Fitness

Communications (8 credits) - Complete two courses:

- **Required:** COMM 218 - Interpersonal Communication (satisfies the Human Relations requirement)
- **And complete one additional course from the following:**
 - COMM 111 - Fundamentals of Public Speaking
 - COMM 111_H - Fundamentals of Public Speaking-Honors
 - COMM 112 - Persuasive Speech

Cultural Literacy (4 credits) - Complete one of the following:

- ANTH 103 - Cultural Anthropology
- ES 101 - Historical Racial and Ethnic Issues
- ES 102 - Contemporary Racial and Ethnic Issues
- HST 203 - History of the United States
- SOC 213 - Race and Ethnicity

Social Science - Complete ONE of the following tracks:

- **Political Science Track (6 credits) - 2 courses:**
 - PS 202 - U.S. Government and Politics 3 Credit(s)
 - PS 203 - State and Local Government and Politics 3 Cr
- **Psychology Track (7 credits) - 2 courses:**
 - PSY 201 - General Psychology 4 Credit(s)
 - PSY 239 - Intro to Abnormal Psychology 3 Credit(s)
- **Sociology Track (8 credits) - 2 courses:**
 - SOC 205 - Social Stratification and Social Systems 4 Cr
 - SOC 206 - Institutions and Social Change 4 Credit(s)
- **Open Social Science Track (6-8 credits) - 2 courses:**
 - Complete **two** courses from the Social Science list

Science - Complete ONE of the following tracks:

- **Forensics Track (12 credits) - 3 courses:**
 - ANTH 101 - Physical Anthropology 4 Credit(s)
 - BI 101K - General Biology: Introduction to Genetics 4 Cr
 - CH 114 - Introduction to Forensic Chemistry 4 Credit(s)
- **GIS Track (12 credits) - 3 courses:**
 - GIS 151 - Digital Earth 4 Credit(s)
 - GIS 245 - GIS 1 4 Credit(s)
 - GIS 246 - GIS 2 4 Credit(s)
- **Open Science Track (11-18 credits) - 3 courses:**
 - Complete two courses with labs and a third course with or without lab, selected from this list: Science/Math/Computer Science

Program Core Courses

Program Core must be completed with a grade of C or better. P/NP not accepted

- CJA 100 - Introduction to Criminal Justice 4 Credit(s)
- CJA 200 - Introduction to Criminology 4 Credit(s)
- CJA 210 - Criminal Investigation 1 3 Credit(s)
- CJA 212 - Criminal Justice Documentation and Reporting 3 Credit(s)
- CJA 213 - Interviewing and Interrogation 3 Credit(s)
- CJA 214 - Introduction to Forensic Science 4 Credit(s)
- CJA 220 - Introduction to Criminal Law 3 Credit(s)
- CJA 222 - Criminal Law: Procedural Issues 3 Credit(s)
- PHL 201 - Ethics 4 Credit(s)

Complete one of the following:

- PHL 221 - Critical Thinking 4 Credit(s)
- COMM 105 - Listening and Critical Thinking 4 Credit(s)

Program Electives

Program Electives must be completed with a letter grade of C or better. P/NP is not accepted. **Complete a minimum of three of the following courses:**

- CJA 201 - Juvenile Delinquency 3 Credit(s)
- CJA 207 - Gender, Crime and Justice 4 Credit(s)
- CJA 280 - Co-op Ed: Criminal Justice (repeatable up to 9 credits; see note)
- HS 102 - Psychopharmacology 4 Credit(s)
- HS 209 - Crisis Intervention and Prevention 3 Credit(s)
- SOC 211 - Social Deviance 3 Credit(s)

Note - Students who completed lower-credit courses to meet General Education requirements may need to take additional Electives to meet the 90-credit minimum.

Notes

- This program follows Associate of Applied Science (AAS) Requirements.
- COMM 218 - Interpersonal Communication meets the AAS Human Relations requirement.
- Co-op internship placements may require a term or more to coordinate. Students who are interested in enrolling in CJA 280 must contact the program coordinator no later than the beginning of the prior term. For example: For a spring-term co-op, the student should contact the program coordinator at the beginning of winter term.
- For questions about transferring to a four-year university, contact your Academic Advisors for help.

Cybersecurity, AAS

Length: 90 credits

Program Contacts

- Offered by the Computer Information Technology Department
- Program Coordinator: Don Easton, eastond@lanecc.edu, 541-463-5532
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu
- Cooperative Education: <https://www.lanecc.edu/programs-academics/internships-cooperative-education>

Estimated Cost: \$17,677

- Resident Tuition: \$11,925*
- Technology Fees: \$1,170
- General Student Fees: \$813**
- Online Course Fee: \$900 (if applicable)
- Books / Materials: \$213 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$156 (Data Fee)
- Other Cost / Expenses: \$2,500 *** (if applicable for Computer + Internet)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>.

* Resident tuition is based on all program requirements (general education, core, directed electives).

** General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers, or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to prepare students with the knowledge and applicable skills necessary for entry-level careers in cybersecurity. Students will acquire foundational knowledge in computer science and information technology, in order to build solution-oriented skills in infrastructure security, enterprise risk

and risk management, cloud computing, cryptography, information assurance, digital forensics, penetration testing, and business continuity. Students will apply this knowledge both in a hands-on lab curriculum and through required internships supporting the local community. In addition, this degree will provide the core foundational knowledge to continue on to a bachelor's degree in cybersecurity and related areas for even further opportunities for career advancement.

Students who complete this program will be able to:

PLO 1 - Defend systems against unauthorized access, modification, and/or destruction

PLO 2 - Perform vulnerability and networking scanning assessments

PLO 3 - Monitor network traffic for unusual activity

PLO 4 - Configure and support security tools such as firewalls, anti-virus software, patch management systems, etc.

PLO 5 - Implement network security policies, application security, access control and corporate data safeguards

PLO 6 - Analyze and establish security requirements for your networks using key compliance frameworks

PLO 7 - Explain the implications of security awareness and procedures

PLO 8 - Develop and update business continuity and disaster recovery protocols

PLO 9 - Conduct security audits and make policy and technical recommendations based on best practices

Program Requirements

General Education

General Ed courses must be completed with a grade of C- or better, or Pass.

Writing (4 credits):

- WR 121 - Academic Composition or WR 121_H

Mathematics (5 credits):

- MTH 111 - College Algebra 5 Credit(s) or higher

Math/CS/CIS Elective (4-5 credits) - Complete one of the following:

- Any CS course higher than CS 120
- Any CIS course higher than CIS 101
- Any MTH course higher than MTH 111

Human Relations (3-4 credits) - Complete one of the following:

- BA 278 - Leadership and Team Dynamics 4 Credit(s)
- CG 100 - College Success 1-3 Credit(s)
- CG 203 - Human Relations at Work 1-3 Credit(s)
- COMM 130 - Business and Professional Communication 4 Credit(s)
- COMM 218 - Interpersonal Communication 4 Credit(s)
- COMM 219 - Small Group Communication 4 Credit(s)
- COMM 260 - Introduction to Conflict Management 4 Credit(s)
- COMM 296 - Communication in Healthcare Settings 4 Credit(s)

Program Core Courses

The following Program Core courses must be completed with a letter grade of B- or better. P/NP not accepted.

- CS 284 - Network Security Fundamentals 4 Credit(s)
- CS 285 - Cybersecurity Operations 4 Credit(s)
- CS 286 - Firewalls and VPNs 4 Credit(s)

The following Program Core courses must be completed with a letter grade of C- or better. P/NP is not accepted, with the exception of CIS 100, which may be completed P/NP.

- CIS 100 - Computing Careers Exploration 1 Credit(s)
- CIS 140U - Introduction to Unix/Linux 4 Credit(s)
- CIS 140W - Introduction to Operating Systems: Windows Clients 4 Credit(s)
- CS 179 - Introduction to Computer Networks 4 Credit(s)
- CS 184 - Introduction to Cybersecurity 4 Credit(s)
- CS 188 - Wireless Networking 4 Credit(s)
- CS 189 - Routing and Switching Essentials 4 Credit(s)
- CS 240U - Advanced Unix/Linux: Server Management 4 Credit(s)
- CS 240W - Advanced Windows: Server Management 4 Credit(s)
- CS 273 - Introduction to Virtualization and Cloud Computing 4 Credit(s)
- CS 275 - Basic Database SQL 4 Credit(s)

- CS 279 - Scaling Networks 4 Credit(s) or CS 290 - Ethical Hacking Fundamentals 4 Credit(s)
- CS 288 - Network Monitoring and Management 4 Credit(s)

Programming Sequence

Programming courses must be completed with a letter grade of C- or better. P/NP is not accepted. Complete two courses including an introductory and advanced course.

Introductory Programming (4 credits) - Complete one of the following:

- CS 161P - Computer Science 1 4 Credit(s) (Python) (Recommended)
- CS 161C - Computer Science 1 4 Credit(s) (C++)

Advanced Programming (4 credits) - Complete one of the following:

- CS 162P - Computer Science 2 4 Credit(s) (Python) (Recommended)
- CS 233S - Python for Systems Administrators 4 Credit(s)
- CS 162C - Computer Science 2 4 Credit(s) (C++)

Cooperative Education

CS 206 must be completed with a grade of C- or better, or Pass. CS 280CN must be completed with a letter grade of C- or better. P/NP is not accepted.

- Complete 2 credits of CS 206 - Co-op Ed: Computer Information Technology Seminar
- Complete 3 credits of CS 280CN - Co-op Ed: Computer Network Operations

Notes

- This program follows the Associate of Applied Science (AAS) Requirements unless otherwise specified.
- A personal laptop is required for all first year students in the degree program. Please contact the Program Coordinator for options and system requirements.
- Cooperative Education (Co-op): Co-op is a required and important part of this program. It provides relevant field experience that integrates theory and practice while providing opportunities to develop skills, explore career options, and network with professionals and employers in the field.
- Students using lower-credit courses to meet General Education requirements may need to take additional Electives to meet the 90-credit minimum.
- Students planning to pursue a bachelor's degree in Computer Science are advised to consult with their academic advisor for additional program requirements at the school they will be transferring to.
- Computer programming languages: Students who complete more than one CS 161 or CS 162 programming language course should be aware that transfer institutions may count multiple 161 or 162 courses as repeats, **and may not accept them in transfer**. Students wishing to complete multiple programming courses should first take a CS 161/162 series and then enroll in CS 133/233 course series for any subsequent programming languages.

Certifications

- By completing CS 273, students can take the exam for the Amazon Web Services Cloud Practitioner certification
- By completing CS 273, students can take the exam for the VMware Certified Associate (VCA) certification
- By completing CS 179, CS 189, and CS 279, students can take the exam for the Cisco Certified Network Associate (CCNA) certification
- By completing CS 285, students can take the exam for the Cisco Certified CyberOps Associate (CCCA) certification
- By completing CS 286, students can take the exam for the Palo Alto Networks Certified Cybersecurity Entry-level Technician (PCCET) certification

Dental Hygiene, AAS

Length: Program 93 credits

Program Prerequisites: 41-44 credits

Program Contacts

- Offered by Health Professions
- Interim Program Coordinator: Michelle Cummins, MEd BSDH, RDH EP, cumminsm@lanecc.edu, 541-463-5752
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Estimated Cost for Program: \$ 42,666

- Resident Tuition: \$ 12,323*
- Technology Fees: \$ 1,209
- General Student Fees: \$ 813**
- Online Course Fee: \$ (if applicable)
- Books / Course Materials: \$ 1,600 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$ 4,024 (certifications-licensure-exams, health Insurance, application fee, background check, drug/alcohol screening, meds record tracker and industry student membership)
- Other Cost / Expenses: \$ 8,900*** (computer/internet, uniforms/shoes, instruments/tools)
- Differential Fees: \$ 13,797****

Estimated Cost for Program Prerequisites: \$ 6,809

- Resident Tuition: \$ 5,830*
- Technology Fees: \$ 572
- General Student Fees: \$ 407**
- Online Course Fee: \$ (if applicable)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives). Any prerequisites required prior to the entry of the program will be listed separately.

** General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to prepare dental hygiene students for entry into the dental hygiene profession as a licensed clinician providing preventive, therapeutic, restorative and educational methods for the control of oral disease and promotion of optimal oral health.

Students who complete this program will be able to:

- PLO 1 - Demonstrate application of principles of ethical reasoning, decision making and professional responsibility in the provision and support of evidence based oral health care services, research, patient care and practice management
- PLO 2 - Demonstrate critical thinking, problem solving and self-evaluation in the provision of comprehensive care, selection of patient management strategies, and professional competence development
- PLO 3 - Select and plan educational and clinical services for periodontal diseases using appropriate interpersonal communication, comprehensive data collection, knowledge of periodontal conditions and therapies, and educational strategies
- PLO 4 - Access, critically appraise, apply and communicate evidence based practices for all periodontal classifications within diverse patient populations
- PLO 5 - Demonstrate interpersonal communication and collaborative skills to effectively interact with diverse population groups, health care providers, dental professionals and community groups
- PLO 6 - Demonstrate application of refined instrumentation skills for periodontal, restorative and therapeutic interventions for individuals at all stages of life
- PLO 7 - Demonstrate application of behavioral sciences and patient centered approaches to promote, improve and maintain oral health
- PLO 8 - Use assessment, planning, implementation and evaluation for the

provision of dental hygiene services and disease prevention strategies within diverse, multicultural and special needs populations, and community groups

PLO 9 - Demonstrate use of mathematical and statistical concepts in the application of clinical and preventive dental care strategies

PLO 10 - Use appropriate library and information resources to research professional issues, develop community health program planning and to support lifelong learning

Experiential Learning: Membership in the Student American Dental Hygienist's Association (SADHA) at the state and national level. Professional meetings and continuing education offerings. Assessment, Planning, Implementation and Evaluation of community health programs. Off-campus experiences with community clinics, school-based screenings, presentations for health fairs, classrooms, inter-professional collaboration and visitations to specialty and general dental offices/clinics.

Admission Information

See <https://www.lanecc.edu/hp/dental-hygiene> for program information and the admission application packet.

Students must have a score of 50 points or higher on ATI TEAS (Test of Essential Academic Skills).

Program Requirements

Prerequisites

Program Prerequisites must be completed with a letter grade of C or better. P/NP is not accepted.

Writing (4 credits) - Complete the following:

- WR 121 - Academic Composition (or WR 121_H)

Math (4 credits) - Complete one of the following:

- MTH 052 - Math for Health and Physical Sciences 4 Credit(s)
- Any Mathematics course higher than MTH 052

Biobonds or Chemistry (5-8 credits) - Complete one of the following options:

- **Option 1: Biobonds (required for Anatomy and Physiology at Lane)**
 - BI 112 - Cell Biology for Health Occupations 4 Credit(s)
 - CH 112 - Chemistry for Health Occupations 4 Credit(s)
- **Option 2: 5 credits of any Chemistry course 100-level or higher**

Anatomy and Physiology (12 credits) - Complete the following:

- BI 231 - Human Anatomy and Physiology 1 4 Credit(s)
- BI 232 - Human Anatomy and Physiology 2 4 Credit(s)

Sociology (4 credits) - Complete one of the following:

- SOC 204 - Introduction to Sociology 4 Credit(s) (or SOC 204_H)
- SOC 205 - Social Stratification and Social Systems 4 Credit(s)
- SOC 206 - Institutions and Social Change 4 Credit(s)

Psychology (4 credits) - Complete one of the following:

- PSY 201 - General Psychology 4 Credit(s)
- PSY 202 - General Psychology 4 Credit(s)
- PSY 203 - General Psychology 4 Credit(s)

Oral Communications (4 credits) - Complete one of the following:

- COMM 100 - Basic Communication 4 Credit(s)
- COMM 111 - Fundamentals of Public Speaking 4 Credit(s) (or COMM 111_H)
- COMM 218 - Interpersonal Communication 4 Credit(s)

Health (4 credits) - Complete the following:

- FN 225 - Nutrition 4 Credit(s)

Enrollment Academic Requirements

Enrollment Academic Requirements must be completed with a letter grade of C or better. P/NP is not accepted.

The following three (3) courses are not required by the application deadline but must be completed prior to beginning the program:

- BI 233 - Human Anatomy and Physiology 3 4 Credit(s) (credits part of prerequisites total)

- BI 234 - Introductory Microbiology 4 Credit(s) (credits part of program core total)
- WR 123 - Composition: Research Writing 4 Credit(s) or WR 227 / WR 227_H (credits part of program core total)

NOTE: WR 123 has a prerequisite of WR 122 that is not embedded into the program but required prior to WR 123. Alternatively, WR 227 does not have an additional requirement.

Program Core Courses

Program Core courses must be completed with a letter grade of C or better. P/NP is not accepted.

DH 120A satisfies the Human Relations requirement and may not be substituted.

- DH 107 - Dental Infection Control and Safety 1 Credit(s)
- DH 113 - Dental Anatomy and Histology 2 Credit(s)
- DH 132 - Dental Materials for the Dental Hygienist 2 Credit(s)
- DH 139 - Special Needs Patient and Dental Emergencies 2 Credit(s)
- DH 228 - Oral Biology 1 4 Credit(s)
- DH 229 - General and Oral Pathology 3 Credit(s)
- DH 233 - Anesthesia/Analgesia for Dental Hygiene Therapy 3 Cr
- DH 234 - Trends and Issues in Dental Hygiene 2 Credit(s)
- DH 254 - Pharmacology 3 Credit(s)

Clinical Dental Hygiene (40 credits):

- DH 118A - Clinical Dental Hygiene 1 4 Credit(s)
- DH 118B - Clinical Dental Hygiene 1 Lab 2 Credit(s)
- DH 119A - Clinical Dental Hygiene 2 3 Credit(s)
- DH 119B - Clinical Dental Hygiene 2 Lab 4 Credit(s)
- DH 120A - Clinical Dental Hygiene 3 Lecture/seminar 3 Credit(s)
- DH 120B - Clinical Dental Hygiene 3 Clinic Lab 4 Credit(s)
- DH 220A - Clinical Dental Hygiene 4 Lecture/seminar 2 Credit(s)
- DH 220B - Clinical Dental Hygiene 4 Lab 5 Credit(s)
- DH 221A - Clinical Dental Hygiene 5 2 Credit(s)
- DH 221B - Clinical Dental Hygiene 5 Lab 5 Credit(s)
- DH 222A - Clinical Dental Hygiene 6 1 Credit(s)
- DH 222B - Clinical Dental Hygiene 6 Lab 5 Credit(s)

Community Dental Health (7 credits):

- DH 237 - Community Dental Health 3 Credit(s)
- DH 238 - Community Dental Health 1 Credit(s)
- DH 239 - Expanded Practice Concepts and Roles 3 Credit(s)

Oral Radiology (5 credits):

- DH 243A - Oral Radiology 1 Lecture 2 Credit(s)
- DH 243B - Oral Radiology 1 Lab 1 Credit(s)
- DH 244A - Oral Radiology 2 Lecture 1 Credit(s)
- DH 244B - Oral Radiology 2 Lab 1 Credit(s)

Periodontology (4 credits):

- DH 270 - Periodontology 1 2 Credit(s)
- DH 271 - Periodontology 2 2 Credit(s)

Restorative Dentistry (7 credits):

- DH 275 - Restorative Dentistry 1 3 Credit(s)
- DH 276 - Restorative Dentistry 2 3 Credit(s)
- DH 277 - Restorative Dentistry 3 1 Credit(s)

Notes

- This program follows Associate of Applied Science (AAS) Requirements unless otherwise specified.
- Students must be accepted in Dental Hygiene Program to enroll in DH courses.

Accreditation

Dental Hygiene, accredited by The American Dental Association's Commission on Dental Accreditation, a specialized accrediting board recognized by the U.S. Dept. of Education. The Commission may be contacted at 312-440-4653 or 211 East Chicago Avenue, Chicago, Illinois 60611.

Diesel Technology, AAS

Length: 93 credits

Program Contacts

- Offered by: Advanced Technology
- Program Coordinator: Steve Webb, webbs@lanecc.edu, 541-463-5708
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu
- Cooperative Education: <https://www.lanecc.edu/programs-academics/internships-cooperative-education>

Estimated Cost: \$19,637

- Resident Tuition: \$12,323*
- Technology Fees: \$1,209
- General Student Fees: \$813**
- Online Course Fee: (if applicable)
- Books / Course Materials: \$500 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$1,552 (class fees and materials)
- Differential Fees: \$3,240****

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to prepare the graduate for employment in occupations such as heavy equipment technician and highway truck technician. Possible job opportunities are available with truck fleets, logging fleets, construction companies, OEM dealerships, road construction contractors, parts sales, general heavy equipment repair shops, agriculture fleets and marine repair shops.

Students who complete this program will be able to:

PLO 1 - Access library, computing, and communications services to obtain information and data

PLO 2 - Demonstrate math skills to find force, pressure, area, volume, horse power, torque, and gear ratios, and perform precision measurement

PLO 3 - Identify and explain technologies used in trucking, construction, logging, agriculture equipment, generators and marine applications in the following subjects:

- Fuel Systems
- Brake Systems
- Powertrain and Chassis Systems
- Hydraulic Systems
- Electrical/Electronic Systems
- HVAC Systems
- Engines

PLO 4 - Identify and apply industry safety standards in a work environment

PLO 5 - Use industry tools and equipment to demonstrate, diagnose, service, repair, testing, disassembly, failure analysis, assembly and operation

Program Requirements

General Education

General Ed courses must be completed with a grade of C- or better, or Pass.

Writing (3-4 credits) - Complete one of the following:

- WR 115W - Introduction to College Writing: Workplace Emphasis 3 Credit(s)

- WR 115 - Introduction to College Composition 4 Credit(s)
- Any WR course higher than WR 115

Math (4-5 credits) - Complete one of the following:

- MTH 085 - Applied Geometry for Technicians 4 Credit(s)
- MTH 097 - Geometry 4 Credit(s)
- MTH 112 - Trigonometry 5 Credit(s)

Human Relations (3-4 credits) - Complete one of the following:

- BA 278 - Leadership and Team Dynamics 4 Credit(s)
- CG 100 - College Success 1-3 Credit(s)
- CG 203 - Human Relations at Work 1-3 Credit(s)
- COMM 130 - Business and Professional Communication 4 Credit(s)
- COMM 218 - Interpersonal Communication 4 Credit(s)
- COMM 219 - Small Group Communication 4 Credit(s)
- COMM 260 - Introduction to Conflict Management 4 Credit(s)
- COMM 296 - Communication in Healthcare Settings 4 Credit(s)

Program Core Courses

Program Core courses must be completed with a grade of C- or better, or Pass. Students must complete the maximum credits listed for all DS and WLD courses. Enrollment in core courses by consent only. See an Academic Advisor or Program Coordinator about enrollment.

- DS 154 - Heavy Duty Braking Systems 1-12 Credit(s)
- DS 155 - Heavy Equipment Hydraulics 1-12 Credit(s)
- DS 158 - Heavy Equipment Chassis and Power Trains 1-12 Credit(s)
- DS 256 - Diesel and Auxiliary Fuel Systems 1-12 Credit(s)
- DS 257 - Diesel Electrical Systems 1-12 Credit(s)
- DS 259 - Diesel Engines and Engine Overhaul 1-12 Credit(s)
- **WELDING or CO-OP - Complete one of the following options:**
 - 1) Welding (11-12 credits) - 3 courses:**
 - WLD 121 - Shielded Metal Arc Welding 1 (stick welding)
 - WLD 143 - Wire Drive Welding 1
 - WLD 122 - Shielded Metal Arc Welding 2 (stick welding) or MFG 101 - Safety and Basic Shop Practice
 - 2) Cooperative Education (12 credits):**
 - DS 280 - Co-op Ed: Diesel (must have consent for this option)

Notes

- This program follows Associate of Applied Science (AAS) Requirements unless otherwise specified.
- Students who complete this program will be prepared to take the AED Foundation exam for the AED Foundation Certified Technician designation.
- Co-op experience may be substituted for major coursework. For more information, please see your Academic Advisor or Program Coordinator.
- This program is articulated with Oregon Institute of Technology, which requires a higher-level math course than is required for the program. Contact your Academic Advisor for help with transfer to OIT.

Accreditation

Diesel Technology, evaluated and accredited by the Association of Equipment Distributors Foundation (AEDF). Membership: Northwest Diesel Industry Council (NDIC) and Oregon Trucking Association (OTA).

Drafting, AAS

Length: 90 credits

Program Contacts

- Offered by: Advanced Technology
- Program Coordinator: Margaret Robertson, robertsonm@lanecc.edu
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Estimated Cost: \$16,822.00

- Resident Tuition: \$11,925*
- Technology Fees: \$1,170
- General Student Fees: \$813** (if applicable)
- Online Course Fee: \$580
- Books / Course Materials: \$1,834 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Other Cost / Expenses: \$500 *** (Computer/Internet)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

** General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Hardware: In order to run AutoCAD, Revit, and SolidWorks software, students need a computer with Windows 10 or newer operating system; CPU of 3.3 GHz or higher; 8 GB of RAM, with 16 GB recommended; 30 GB free disk space for download and installation, plus 500 GB or more storage; graphics card capable of 24-bit color and DirectX 11 compliant, such as Nvidia Quadro series, AMD FirePro series, or AMD Radeon series; at least two USB ports; and an external mouse. (A computer with Mac OS can run AutoCAD software, but not Revit or SolidWorks.) A limited number of laptops are available on loan from the LCC Student Helpdesk. In addition, students need a way to store backup copies of all files, such as a flash drive, external hard drive, or cloud service.

Connectivity: Students need a reliable internet connection; a browser such as Google Chrome or Firefox; and a robust antivirus and firewall product such as McAfee or Norton, kept up to date.

Software: Students need Microsoft Office, with Word, Excel, and PowerPoint, available free to LCC students. Students will need the current version of AutoCAD, Revit, and SolidWorks software and will get instructions in classes for downloading free educational versions.

Program Learning Outcomes

The purpose of this program is to train and prepare graduates from diverse backgrounds to work with and assist architects, engineers, other designers, and technicians as part of construction, manufacturing, or engineering teams. Coursework prepares graduates to work collaboratively as design paraprofessionals across a range of capacities using a variety of software platforms. Students build skills in problem-solving, analysis, technical graphics, and basic design. Successful graduates are able to communicate effectively in multiple formats.

Students who complete this program will be able to:

- PLO 1 - Effectively and independently use CAD, solid modeling, and building information modeling software in alignment with industry standards.
- PLO 2 - Visualize three-dimensional objects from multiple viewing directions and translate three-dimensional objects into two-dimensional drawings.
- PLO 3 - Create mechanical and architectural drawings which follow recognized national standards for format, annotation, lines, and symbols.
- PLO 4 - Produce documents which accurately represent building systems, materials, methods, and building codes.
- PLO 5 - Produce documents which accurately represent physical mechanisms and mechanical design strategies.
- PLO 6 - Conduct research to solve basic design problems as an individual and/or part of a team.
- PLO 7 - Use quantitative analysis of data as the basis for solving problems and making decisions.

Program Requirements

General Education

General Ed courses can be completed with a grade of C- or better, or Pass.

Writing (8 credits) - Complete both of the following:

- WR 121 - Academic Composition 4 Credit(s) or WR 121_H and
- WR 227 - Technical Writing 4 Credit(s) or WR 227_H

Algebra (4 credits) - Complete one of the following:

- MTH 075 - Applied Algebra for Technicians 4 Credit(s)
- MTH 095 - Intermediate Algebra 5 Credit(s)
- MTH 098 - Math Literacy 5 Credit(s)
- MTH 105 - Math in Society 4 Credit(s)
- MTH 106 - Math in Society 2 4 Credit(s)
- MTH 107 - Math in Society 3 4 Credit(s)
- MTH 111 - College Algebra 5 Credit(s)
- Any 200-level Math course

Geometry (4-5 credits) - Complete one of the following:

- MTH 085 - Applied Geometry for Technicians 4 Credit(s)
- MTH 097 - Geometry 4 Credit(s)
- MTH 112 - Trigonometry 5 Credit(s)

Human Relations (3-4 credits) - Complete one of the following:

- BA 278 - Leadership and Team Dynamics 4 Credit(s)
- CG 100 - College Success 1-3 Credit(s)
- CG 203 - Human Relations at Work 1-3 Credit(s)
- COMM 130 - Business and Professional Communication 4 Credit(s)
- COMM 218 - Interpersonal Communication 4 Credit(s)
- COMM 219 - Small Group Communication 4 Credit(s)
- COMM 260 - Introduction to Conflict Management 4 Credit(s)
- COMM 296 - Communication in Healthcare Settings 4 Credit(s)

Computer Literacy (4 credits):

- CS 120 - Concepts of Computing: Information Processing 4 Credit(s)
- OR HIGHER CS course

Open Elective (3 credits):

- Complete any 100- or 200-level course to meet this requirement

Program Core Courses

Program Core courses must be completed with a grade of C- or better, or Pass.

- CST 122 - Construction Codes 2 Credit(s)
- DRF 121 - Mechanical Drafting 4 Credit(s)
- DRF 137 - Architectural Plans 4 Credit(s)
- DRF 160 - Computer-Aided Drafting and Design 4 Credit(s)
- DRF 203 - Electrical Drafting 2 Credit(s)
- DRF 205 - Drafting: Structures 4 Credit(s)
- DRF 207 - Drafting: Strength of Materials 4 Credit(s)
- DRF 210 - Commercial Buildings 4 Credit(s)
- DRF 211 - Sustainable Building Systems 4 Credit(s)
- DRF 220 - Building Information Modeling 4 Credit(s)
- DRF 235 - Mechanical Design Skills 4 Credit(s)
- DRF 236 - Machine Elements 4 Credit(s)
- DRF 245 - Solid Modeling 4 Credit(s)
- DRF 248 - Hydraulics Drafting 1 Credit(s)

Cooperative Education

Cooperative Education courses must be completed with a grade of C- or better, or Pass. **Complete the following:**

- Complete 2 credits of COOP 206 - Co-op Ed: Internship Seminar
- Complete 3 credits of ENGR 280D - Co-op Ed: Drafting

Program Electives

Program Electives must be completed with a grade of C- or better, or Pass. **Complete 10 credits** from the Advanced Technology Directed Elective List below.

Highly recommended for Drafting: ART 117, ART 216, CH 150, CIS 140W, CIS 195, CS 179, CST 116, CST 201, DS 154, DS 257, DS 259, GIS 151, GIS 245, MFG 101, MUL 101, MUL 212, PH 101, PH 102, PH 103, PH 201, PH 202, PH 203, WLD 143, WLD 151

Advanced Technology Directed Elective List

Some courses in the list below may already appear as requirements in some programs. In these instances, they cannot be taken twice nor counted in two

areas. Please choose different electives. The courses that are program core courses are noted in the list as:

C = required in Construction

Dr = required in Drafting

Dt = required in Diesel Technology

- APR 101 - Trade Skills Fundamentals 4 Credit(s)
- APR 105 - Electrical Wiring for the Trades 4 Credit(s)
- APR 106 - Plumbing Trade Introduction 2 Credit(s)
- ART 117 - Basic Design: 3-Dimensional 3 Credit(s)
- ART 216 - Digital Design Tools 3 Credit(s)
- BA 101 - Introduction to Business 4 Credit(s)
- BT 165 - Introduction to the Accounting Cycle 4 Credit(s)
- CH 150 - Preparatory Chemistry 3 Credit(s)
- CIS 140W - Introduction to Operating Systems: Windows Clients 4 Credit(s)
- CIS 195 - Web Authoring 1 4 Credit(s)
- COOP 206 - Co-op Ed: Internship Seminar 1-2 Credit(s) ^{Dr}
- CS 120 - Concepts of Computing: Information Processing 4 Credit(s)
- CS 179 - Introduction to Computer Networks 4 Credit(s)
- CST 110 - Blueprint Reading 1 3 Credit(s) ^C
- CST 111 - Construction Orientation and Environment 2 Credit(s) ^C
- CST 116 - Construction Estimating 4 Credit(s) ^C
- CST 118 - Building Construction 1-5 Credit(s) ^C
- CST 119 - Building Construction Surveying 3 Credit(s) ^C
- CST 201 - Sustainable Building Practices 3 Credit(s)
- CST 211 - Blueprint Reading 2 3 Credit(s) ^C
- DRF 160 - Computer-Aided Drafting and Design 4 Credit(s)
- DRF 205 - Drafting: Structures 4 Credit(s) ^{C, Dr}
- DRF 207 - Drafting: Strength of Materials 4 Credit(s) ^{Dr}
- DRF 210 - Commercial Buildings 4 Credit(s) ^{Dr}
- DRF 220 - Building Information Modeling 4 Credit(s) ^{Df}
- DS 154 - Heavy Duty Braking Systems 1-12 Credit(s) ^{Dt}
- DS 257 - Diesel Electrical Systems 1-12 Credit(s) ^{Dt}
- DS 259 - Diesel Engines and Engine Overhaul 1-12 Credit(s) ^{Dt}
- ET 129 - Electrical Theory 1 4 Credit(s)
- ET 130 - Electrical Theory 2 1-4 Credit(s)
- G 101 - Earth's Dynamic Interior 4 Credit(s) or G 102, G 103, G 146
- GIS 151 - Digital Earth 4 Credit(s)
- GIS 245 - GIS 1 4 Credit(s)
- HE 152 - Drugs, Society and Behavior 3 Credit(s)
- HE 252 - First Aid 3 Credit(s)
- MFG 101 - Safety and Basic Shop Practice 3 Credit(s) ^{Dt}
- MTH 060 - Beginning Algebra 4 Credit(s)
- MTH 075 - Applied Algebra for Technicians 4 Credit(s)
- MTH 085 - Applied Geometry for Technicians 4 Credit(s)
- MTH 095 - Intermediate Algebra 5 Credit(s)
- MUL 101 - Introduction to Media Arts 3 Credit(s)
- MUL 212 - Digital Imaging 4 Credit(s)
- NRG 121 - Air Conditioning System Analysis 3 Credit(s)
- NRG 124 - Energy Efficiency Methods 4 Credit(s)
- PH 101 - Fundamentals of Physics 4 Credit(s) or PH 102, PH 103, PH 201, PH 202, PH 203
- RTEC 105 - Introduction to Advanced Technology 3 Credit(s)
- SPAN 101 - Spanish, First-Year 5 Credit(s) or SPAN 102, SPAN 103, SPAN 201, SPAN 202, SPAN 203
- WATR 101 - Introduction to Water Resources 3 Credit(s)
- WLD 111 - Blueprint Reading for Welders 3 Credit(s)
- WLD 121 - Shielded Metal Arc Welding 1 (stick welding) 1-4 Cr ^{Dt}
- WLD 122 - Shielded Metal Arc Welding 2 (stick welding) 1-4 Credit(s) ^{Dt}
- WLD 139 - Welding Lab 1-3 Credit(s)

- WLD 140 - Welder Qualification (Cert): Wire Drive Processes 3 Credit(s)
- WLD 141 - Welder Qualification (Cert): SMAW 3 Credit(s)
- WLD 143 - Wire Drive Welding 1 1-4 Credit(s) ^{Dt}
- WLD 151 - Fundamentals of Metallurgy 1-3 Credit(s)
- CST 298 - Independent Study: Construction 1-12 Credit(s) (instructor approval only)
- DRF 298 - Independent Study: Drafting 1-12 Credit(s) (instructor approval only)

Notes

- This is the parent program for: Drafting, 1-yr Certificate, Drafting for Commercial Construction, CPC, Drafting for Manufacturing, CPC, and Drafting for Residential Construction, CPC.
- This program follows Associate of Applied Science (AAS) Requirements unless otherwise specified.
- Cooperative Education (Co-op): Co-op offers drafting students college credit and a grade for on-the-job work experience related to their educational and career goals. Through Co-op, students connect theory and practice, develop skills, expand career knowledge, and make contacts for the future. Work schedules and work sites vary. For more information please see an Academic Advisor or the Program Coordinator.
- This program is articulated with Oregon Institute of Technology, which requires a higher-level math course than is required for the program. Contact your Academic Advisor for help with transfer to OIT.
- Students using lower-credit courses to meet General Education requirements may need to take additional Electives to meet the 90 credit minimum.

Early Childhood Education, AAS

Length: 90 credits

Program Contacts

- Offered by the Social Science Division
- Program Coordinator: Kathleen Lloyd, lloydk@lanecc.edu, 541-463-5287
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu
- Cooperative Education: Kathleen Lloyd, lloydk@lanecc.edu, 541-463-5287; <https://www.lanecc.edu/programs-academics/internships-cooperative-education>

Estimated Cost: \$16,728

- Resident Tuition: \$11,925*
- Technology Fees: \$1,170
- General Student Fees: \$813**
- Online Course Fee: \$900 (if applicable)
- Books / Course Materials: \$1,800 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$120*** (MMR immunization if needed)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to develop skilled professionals who will care for and educate young children. Graduates work in a variety of private and public child

care settings and in family child care and early intervention programs. Graduates may also work with families and community organizations as parenting coaches, policymakers and advocates.

Students who complete this program will be able to:

- PLO 1 - Design and implement a Reggio-inspired curriculum approach for children to learn to make appropriate choices and actively participate in their own learning
- PLO 2 - Apply age-appropriate guidance strategies so children develop empathy, moral autonomy, self-worth and the ability to self-regulate in challenging situations
- PLO 3 - Use basic mathematics in everyday life and business transactions, including measurement, introduction of probability and statistics, reading graphs and tables, and signed numbers
- PLO 4 - Apply research and observational skills to deepen an understanding of human development
- PLO 5 - Examine ways to administer and manage the successful operations of child care programs

Program Requirements

General Education

General Ed courses must be completed with a grade of C- or better, or Pass.

Writing (4 credits) - Complete one of the following:

- WR 115 - Introduction to College Composition 4 Credit(s)
- or higher-level Writing course

Math (3 credits) - Complete one of the following:

- MTH 025 - Basic Mathematics Applications 3 Credit(s)
- or higher-level Math course

Human Relations (3-4 credits) - Complete one of the following:

- BA 278 - Leadership and Team Dynamics 4 Credit(s)
- CG 100 - College Success 1-3 Credit(s)
- CG 203 - Human Relations at Work 1-3 Credit(s)
- COMM 130 - Business and Professional Communication 4 Credit(s)
- COMM 218 - Interpersonal Communication 4 Credit(s)
- COMM 219 - Small Group Communication 4 Credit(s)
- COMM 260 - Introduction to Conflict Management 4 Credit(s)
- COMM 296 - Communication in Healthcare Settings 4 Credit(s)

Health/PE/Dance (3 credits):

- Complete any combination of Health (HE), Physical Education (PE/PEAT/PEO) or Dance (D) courses to meet this requirement

Program Core Courses

Program Core courses must be completed with a grade of C- or better, or Pass.

- ECE 105 - Health and Safety Issues in Early Childhood Education 2 Credit(s)
- ECE 110 - Observing Young Children's Behavior 1 Credit(s)
- ECE 120 - Introduction to Early Childhood 2 Credit(s)
- ECE 130 - Guidance of Young Children 3 Credit(s)
- ECE 150 - Creative Activities for Children 3 Credit(s)
- ECE 160 - Exploring Early Childhood Curriculum 4 Credit(s)
- ECE 170 - Infants and Toddlers Development 4 Credit(s)
- ECE 210 - Applying Early Childhood Curriculum 4 Credit(s)
- ECE 230 - Family, School, Community Relations 3 Credit(s)
- ECE 250 - Infant and Toddler Environments 3 Credit(s)
- ECE 260 - Administration of Child Care Programs 3 Credit(s)
- FN 130 - Family Food and Nutrition 3 Credit(s)
- HDFS 226 - Child Development 3 Credit(s)
- HDFS 227 - Children Under Stress 3 Credit(s)

Multicultural / Diversity (3 credits). Complete one course:

- ECE 253 - Diversity Issues in Early Childhood Education 3 Credit(s)
- ED 258 - Multicultural Education 3 Credit(s)

Inclusion / Special Needs (3 credits). Complete one course:

- HDFS 228 - Young Children with Special Needs 3 Credit(s)
- ED 269 - Inclusion and Special Needs 3 Credit(s)

Supervised Teaching & Cooperative Education

Supervised Teaching and Cooperative Education must be completed with a grade of C- or better, or Pass.

Supervised Teaching - Complete 12 credits of the following:

- ECE 240 - Supervised Student Teaching 4 Credit(s)

Cooperative Education - Complete 6 credits of the following:

- ED 280EC - Co-op Ed: Early Childhood Education 1-7 Credit(s)

Electives

Electives courses must be completed with a grade of C- or better, or Pass.

Open Electives (6 credits):

- Complete any 100- or 200-level courses to meet this requirement.

Program Electives (6 credits):

- Electives must be completed with a grade of C- or better, or Pass. **Complete 6 credits.** Choose any combination of courses from the following list. In the subject areas listed, any course from that subject is accepted (100-level or higher, exception for math). Course options recommended by the Program Coordinator are listed in parentheses.
- ANTH - Anthropology
- ARH - Art History
- ART - Art (*recommended: ART 111, ART 250, ART 261*)
- ASL - American Sign Language (*recommended: ASL 101, ASL 102, ASL 103*)
- ASTR - Astronomy
- BA - Business
- BT - Business Technology
- BI - Biology (*recommended: BI 101E, BI 101I, BI 102E, BI 103A, BI 103F*)
- CG - Career Guidance
- CH - Chemistry
- CHN - Mandarin Chinese
- CIS - Computer Information Technology (*recommended: CIS 101*)
- COMM - Communication (*recommended: COMM 111, COMM 218*)
- CRWR - Creative Writing
- CS - Computer Science (*recommended: CS 120*)
- CW - Chinuk Wawa
- ED - Education (*recommended: ED 100, ED 216, ED 258, ED 269*)
- EL - Effective Learning (EL 115R, EL 116, EL 117 only)
- ENG - English (*recommended: ENG 100*)
- ES - Ethnic Studies (*recommended: ES 101, ES 244*)
- FN - Nutrition
- FR - French
- G - Geology
- GEOG - Geography (*recommended: GEOG 141*)
- GIS - Geographic Information Science
- HE - Health
- HS - Human Services
- HST - History (*recommended: HST 266*)
- HUM - Humanities (*recommended: HUM 100*)
- MTH - Math (MTH 060 or higher only)
- MUS - Music (*recommended: MUS 101, MUS 131, MUS 134*)
- PH - Physics
- PHL - Philosophy (*recommended: PHL 201, PHL 221*)
- PSY - Psychology (*recommended: PSY 201, PSY 215*)
- SLD - Student Leadership Development (*recommended: SLD 111*)
- SOC - Sociology (*recommended: SOC 204, SOC 205, SOC 210*)
- SPAN - Spanish
- TA - Theatre Arts
- WR - Writing (WR 121 or higher only)

Notes

- This program follows Associate of Applied Science (AAS) Requirements unless otherwise specified.
- This is the parent program for Early Childhood Education, 1-yr Certificate, Early Childhood Teacher Aide, CPC, Early Childhood Education: Guidance and Curriculum, CPC, and Early Childhood Education: Infant and Toddler, CPC.
- Immunization is required prior to enrolling in ECE 240 - Supervised Student Teaching. More information at lanecc.edu/socialscience/early-childhood-education.
- Some ECE and HDFS courses are offered through College Now at high schools in Lane County and outlying areas. For more information, see lanecc.edu/hsconnections/collegenow/courses-high-school.
- Students seeking support with Reading / Writing / Math or English Language skills while transitioning to Early Childhood classes may apply to PASS Lane ECE. Contact Marcia Koenig (koenigm@lanecc.edu) 541-463-5818, Bldg 4/215
- Students receiving SNAP food stamp benefits who are completing ECE Certificates may contact STEP at Lane program for coaching and access to financial resources.
- Transfer Credit for Prior Learning may be granted based on OCCD Oregon Registry Steps. Please contact the Program Coordinator, Kathleen Lloyd.
- Students seeking the AAS, ECE degree must complete a total of 270 hours (90 hours per term, for a total of three terms) of supervised student teaching. Please contact the Program Coordinator, Kathleen Lloyd.
- Cooperative Education (Co-op). Contact Kathleen Lloyd. Early Childhood Education (ECE) majors are required to complete 6 credits of ED 280EC - Co-op Ed: Early Childhood Education to earn the ECE AAS degree. Students are eligible to enroll in the course and work in an off-campus, community site once they have completed 3 terms of student teaching ECE 240. Cooperative education worksites and schedules vary.

Credential

ECE students are encouraged to enroll in the Oregon Registry (<https://my.oregonregistryonline.org/>), a statewide professional recognition program that records and recognizes the growth and achievements of early childhood care and education professionals. Step 7 provides the Child Development Associate (CDA) Credential. College credit is also available for individuals at Step 7 or higher on the Oregon Registry, based on community training hours. Child Development Associate (CDA).

Electrician Apprenticeship Technologies, AAS

Length: 90 credits

Program Contacts

- Offered by Advanced Technology
- Program Coordinator: Joy Crump, crumpj@lanecc.edu, 541-463-5496
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Estimated Cost: \$13,887

- Resident Tuition: \$9,010*
- Technology Fees: \$884
- General Student Fees: \$1,265** (if applicable)
- Online Course Fee: \$490
- Books / Course Materials: \$1,980 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$258 (Apprenticeship Dept fees, Additional class-specific fees, Fabrication/Welding Program fee)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanec.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives). Any prerequisites required prior to the entry of the program will be listed separately.

** General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to provide a structured system of training in the electrician trade or occupation leading to certification and journey-level status, only for apprentices who are sponsored by individual employers, accepted by a Joint Apprenticeship Training Committee, and registered with the State of Oregon Bureau of Labor and Industries.

Students who complete this program will be able to:

PLO 1 - Perform the duties and responsibilities of the electrician trade/occupation

PLO 2 - Apply theory to electrical wiring

PLO 3 - Demonstrate and use industry safety standards

PLO 4 - Develop attitudes conducive to improve customer relations skills in the electrician trade

PLO 5 - Develop communication and critical thinking skills necessary for job advancement

PLO 6 - Use appropriate library and information resources to research professional issues and support lifelong learning

PLO 7 - Access library, computing, and communications services, and appropriately select information and data from regional, national, and international networks

PLO 8 - Represent, analyze and determine rules for finding patterns relating to linear functions, non-linear functions and arithmetic sequences with tables, graphs, and symbolic rules

PLO 9 - Adapt to new job requirements to qualify for advancement in becoming lead supervisors

PLO 10 - Repair and install electrical wire devices according to licensure regulations to meet National Electrical Code and Oregon Building Codes Division for Inside Wire Electrician, Limited Energy Technician-License A and License B, Limited Maintenance Electrician, and Manufacturing Plant Electrician

Admission Information

Students must be registered apprentices with the State of Oregon Bureau of Labor and Industries and accepted by a Joint Apprenticeship Training Committee. In most cases, minimum qualifications to begin an apprenticeship include a minimum age of 18 years, a high school diploma or GED, and high school or college level Algebra with a C grade or higher (or equivalent).

Program Requirements

General Education

General Ed courses must be completed with a grade of C- or better, or Pass.

Writing (4 credits):

- WR 115 - Introduction to College Composition 4 Credit(s) or higher

Math (4 credits):

- MTH 060 - Beginning Algebra 4 Credit(s) or higher

Human Relations (3-4 credits) - Complete one of the following:

- BA 278 - Leadership and Team Dynamics 4 Credit(s)
- CG 100 - College Success 1-3 Credit(s)
- CG 203 - Human Relations at Work 1-3 Credit(s)
- COMM 130 - Business and Professional Communication 4 Credit(s)
- COMM 218 - Interpersonal Communication 4 Credit(s)
- COMM 219 - Small Group Communication 4 Credit(s)
- COMM 260 - Introduction to Conflict Management 4 Credit(s)
- COMM 296 - Communication in Healthcare Settings 4 Credit(s)

Program Core Courses

Complete all courses listed in one of the following trades. Program Core courses must be completed with a letter grade of C or better. P/NP is not accepted.

Inside Wire Electrician (47 credits)

- APR 130 - Electrical Principles 5 Credit(s)
- APR 131 - Electrical Principles/Residential Wiring 5 Credit(s)
- APR 132 - Electrical Residential Wiring Lab 3 Credit(s)
- APR 133 - Electrical Generators, Transformers, and Motors 1 5 Cr
- APR 134 - Electrical Generators, Transformers and Motors 2 5 Cr
- APR 135 - Electrical, Generators, Transformers, & Motors Lab 3 Cr
- APR 220 - Electrical Apprenticeship Code and Exam Preparation 2-3 Credit(s) (take 8 credits of APR 220)
- APR 225 - Electrical Motor Controls 5 Credit(s)
- APR 226 - Electrical Grounding/Bonding and Blueprint Reading 5 Cr
- APR 227 - Electrical System Troubleshooting 3 Credit(s)

Limited Energy Technician License A (38 credits)

- APR 101A - Trade Skills Fundamentals 4 Credit(s)
- APR 140 - Electrical Systems Installation Methods 4 Credit(s)
- APR 141 - Limited Voltage Electrical Circuits 4 Credit(s)
- APR 142 - Devices, Testing Equipment and Code 4 Credit(s)
- APR 143 - Limited Voltage Cabling 4 Credit(s)
- APR 144 - Communications 4 Credit(s)
- APR 220 - Electrical Apprenticeship Code and Exam Preparation 2-3 Credit(s) (take 2 credits of APR 220)
- APR 240 - Audio and Intrusion Systems 4 Credit(s)
- APR 241 - Fire Alarm Systems and Nurse Call 4 Credit(s)
- APR 242 - Limited Voltage System Integration 4 Credit(s)

Limited Energy Technician License B (26 credits)

- APR 101A - Trade Skills Fundamentals 4 Credit(s)
- APR 140 - Electrical Systems Installation Methods 4 Credit(s)
- APR 141 - Limited Voltage Electrical Circuits 4 Credit(s)
- APR 142 - Devices, Testing Equipment and Code 4 Credit(s)
- APR 143 - Limited Voltage Cabling 4 Credit(s)
- APR 144 - Communications 4 Credit(s)
- APR 220 - Electrical Apprenticeship Code and Exam Preparation 2-3 Credit(s) (take 2 credits of APR 220)

Limited Maintenance Electrician (20-23 credits)

- APR 189 - Shop Practices 2 Credit(s) OR MTH 065 - Elementary Algebra 4 Credit(s) or higher
- APR 190 - Electrical Theory 1 1-4 Credit(s) (take 4 cr of APR 190)
- APR 191 - Electrical Theory 2 1-4 Credit(s) (take 4 cr of APR 191)
- APR 220 - Electrical Apprenticeship Code and Exam Preparation 2-3 Credit(s) (take 2 credits of APR 220)
- APR 285 - Motors 1-4 Credit(s) (take 4 credits of APR 285) OR APR 290 - Programmable Controllers 1 (take 4 credits)
- APR 286 - Motors 2 1-4 Credit(s) (take 4 credits of APR 286) OR APR 291 APR 291 - Programmable Controllers 2 (take 4 credits)

Manufacturing Plant Electrician (40-43 credits)

- APR 185 - Shielded Metal Arc Welding 1 1-4 Credit(s) (take 2 cr of APR 185)
- APR 189 - Shop Practices 2 Credit(s) OR MTH 065 - Elementary Algebra 4 Credit(s) or higher
- APR 190 - Electrical Theory 1 1-4 Credit(s) (take 4 cr of APR 190)
- APR 191 - Electrical Theory 2 1-4 Credit(s) (take 4 cr of APR 191)
- APR 220 - Electrical Apprenticeship Code and Exam Preparation 2-3 Credit(s) (take 8 credits of APR 220)
- APR 285 - Motors 1-4 Credit(s) (take 4 credits of APR 285)
- APR 286 - Motors 2 1-4 Credit(s) (take 4 credits of APR 286)

- APR 290 - Programmable Controllers 1 1-4 Credit(s) (take 4 cr of APR 290)
- APR 291 - Programmable Controllers 2 1-4 Credit(s) (take 4 cr of APR 291)
- APR 292 - Programmable Controllers 3 4 Credit(s)

Program Electives

Directed Electives must be completed with a grade of C- or better, or Pass. Elective credits will be different depending on which trade students choose to pursue. **Complete credits to meet 90 total credits for the program. Select courses from the list below. Contact your Academic Advisor or Program Coordinator for help determining the number of elective credits required.**

- APR 101 - Trade Skills Fundamentals 4 Credit(s)
- APR 105 - Electrical Wiring for the Trades 4 Credit(s)
- CS 120 - Concepts of Computing: Information Processing 4 Credit(s)
- CST 110 - Blueprint Reading 1 3 Credit(s)
- CST 111 - Construction Orientation and Environment 2 Credit(s)
- CST 118 - Building Construction 1-5 Credit(s)
- CST 211 - Blueprint Reading 2 3 Credit(s)
- DRF 160 - Computer-Aided Drafting and Design 4 Credit(s)
- ET 121 - Shop Practices 2 Credit(s)
- HE 152 - Drugs, Society and Behavior 3 Credit(s)
- HE 252 - First Aid 3 Credit(s)
- MTH 085 - Applied Geometry for Technicians 4 Credit(s)
- MTH 111 - College Algebra 5 Credit(s)
- MTH 112 - Trigonometry 5 Credit(s)
- WLD 121 - Shielded Metal Arc Welding 1 (stick welding) 1-4 Credit(s)
- Any course(s), 100-level or higher, selected from the Approved Discipline Studies Courses for Associate Degrees and Oregon Transfer Module lists.

Journey Level Card from Oregon BOLI (22 credits)

Students who obtain a State of Oregon Apprenticeship Training Journey Level Card or Oregon Bureau of Labor and Industries Apprenticeship and Training Division (BOLI-ATD) Certificate of Completion will be awarded 22 Credits.

Notes

- This program follows Associate of Applied Science (AAS) Requirements unless otherwise specified.
- This is the parent program for the Electrician Apprenticeship Technologies: Trade Worker Apprenticeship Technologies, CPC, Electrician Apprenticeship Technologies, 1-yr Certificate, and Limited Electrician Apprenticeship Technologies, Certificate of Completion.
- Complete 4000-8000 hours State of Oregon-approved on-the-job training and provide a State of Oregon Apprenticeship Training Journey-level card or BOLI-ATD Certificate of Completion.
- This program is articulated with Oregon Institute of Technology, which requires a higher-level math course than is required for the program. Contact your Academic Advisor for help with transfer to OIT. Students using lower-credit courses to meet General Education requirements may need to take additional Electives to meet the 90-credit minimum.

Licensing and Certification

An apprenticeship "Award of Completion" issued by the Oregon Bureau of Labor and Industries Apprenticeship and Training Division certifies that an individual has been trained in all aspects of an occupation and has met the requirements for program completion. This certificate is recognized throughout Oregon and industry-wide as a valid indicator of high quality, standardized training, and it provides on-the-job training documentation for community college credit. In addition, the Oregon community college Electrician Apprenticeship Technologies pathway provides statewide transfer opportunities, ladder certificates of completion, and an optional transfer path into Oregon Institute of Technology Bachelor of Science degree in Operations Management or Bachelor of Applied Science degree in Technology and Management. The Electrician Apprenticeship

Technologies pathway includes an advising guide with a set of recommended courses that satisfy both the AAS degree and the Oregon Transfer Module (OTM). Students who complete the recommended set of OTM courses may apply for 45 credits of guaranteed block transfer to any other community college. Electrician trades require successful completion of trade-specific licensure examinations through the Oregon Building Codes Division.

Energy Management Technician: Building Controls Technician (online), AAS

Length: 93 credits

Program Contacts

- Offered by the Science, Math and Engineering Division
- Program Coordinator: Roger Ebbage, ebbager@lanecc.edu, 541-556-7724
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu
- Cooperative Education: <https://www.lanecc.edu/programs-academics/internships-cooperative-education>

Estimated Cost: \$15,468

- Resident Tuition: \$12,323*
- Technology Fees: \$1,209
- General Student Fees: \$407** (if applicable)
- Online Course Fee: \$930
- Books / Course Materials: \$250 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Other Cost / Expenses: \$350*** (controls building kit)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

** General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

Through this program, students will learn how residential and commercial building systems consume energy by understanding how systems work and the interaction between one another. Students will be able to evaluate and measure consumption and make an informed recommendation on building system energy efficiency improvements. Students will also learn the basics of Building Controls systems and how they are fundamental to achieving higher levels of energy efficiency through building operation. Employment is found with Controls System Suppliers, Controls Installation Contractors, Government, Utilities, Engineering Firms, School Districts.

Students who complete this program will be able to:

PLO 1: Evaluate the energy use patterns for residential and commercial buildings and recommend energy efficiency measures and renewable energy solutions for high energy consuming buildings

PLO 2: Understand the interaction between energy consuming building systems and make energy use reduction recommendations based on that understanding

PLO 3: Construct energy evaluation technical reports and make presentations for potential project implementation

PLO 4: Collect and display data as lists, tables, and plots using appropriate technology (e.g., Excel and other computer software)

PLO 5: Develop and evaluate inferences and predictions that are based on collected data

PLO 6: Interpret the concepts of a problem-solving task, and, using mathematics, translate concepts into energy-related projects

PLO 7: Read and analyze building blue prints including floor, mechanical, and electrical plans

PLO 8: Read elevations, sections, schedules, and construction notes

PLO 9: Analyze a variety of commercial HVAC and lighting systems from a controls perspective
 PLO 10: Become familiar with modules and electronics commonly used to implement building automation schemes
 PLO 11: Write building control systems schemes
 PLO 12: Understand control system management software
 PLO 13: Diagnose and troubleshoot existing building control systems

Admission Information

Apply online at lanecc.edu/science/energy-management. Applicants must have completed MTH 065 or MTH 070 prior to enrollment. Individual courses may be taken with department/instructor approval.

Program Requirements

General Education

General Education courses must be completed with a grade of C- or better, or Pass. It is recommended that General Education requirements be completed prior to entering the program.

Writing (8 credits) - Complete both of the following:

- WR 121_H / WR 121 - Academic Composition 4 Credit(s) or higher
- WR 227_H / WR 227 - Technical Writing 4 Credit(s)

Math (5 credits) - Complete one of the following:

- MTH 095 - Intermediate Algebra 5 Credit(s)
- MTH 111 - College Algebra 5 Credit(s)
- Any MTH course higher than MTH 111

Human Relations (3-4 credits) - Complete one of the following:

- BA 278 - Leadership and Team Dynamics 4 Credit(s)
- CG 100 - College Success 1-3 Credit(s)
- CG 203 - Human Relations at Work 1-3 Credit(s)
- COMM 130 - Business and Professional Communication 4 Credit(s)
- COMM 218 - Interpersonal Communication 4 Credit(s)
- COMM 219 - Small Group Communication 4 Credit(s)
- COMM 260 - Introduction to Conflict Management 4 Credit(s)
- COMM 296 - Communication in Healthcare Settings 4 Credit(s)

Physics (8 credits) - Complete one of the following sequences:

- **Sequence 1 - Complete both of the following:**
 - PH 101 - Fundamentals of Physics 4 Credit(s)
 - PH 102 - Fundamentals of Physics 4 Credit(s)
- **Sequence 2 - Complete both of the following:**
 - PH 102 - Fundamentals of Physics 4 Credit(s)
 - PH 103 - Fundamentals of Physics 4 Credit(s)
- **Other accepted sequences:**
 - PH 201 - General Physics 5 Credit(s) + PH 202 - General Physics 5 Credit(s)
 - PH 202 - General Physics 5 Credit(s) + PH 203 - General Physics 5 Credit(s)
 - PH 211 - General Physics with Calculus 5 Credit(s) + PH 212 - General Physics with Calculus 5 Credit(s)
 - PH 212 - General Physics with Calculus 5 Credit(s) + PH 213 - General Physics with Calculus 5 Credit(s)

Program Core Courses

Program Core courses must be completed with a grade of C- or better, or Pass. NOTE: BT 123, CS 133JS, and CS 275 have prerequisites that are not embedded into the program but must be completed prior to completing the required program course. Work with your academic advisor on when to take these prerequisites. Students who have previous computer experience may be able to waive the prerequisite for BT 123. Please contact the Business Department for information about waiving prerequisites.

- BT 123 - MS EXCEL for Business 4 Credit(s)
- CS 179 - Introduction to Computer Networks 4 Credit(s)
- CST 110 - Blueprint Reading 1 3 Credit(s)
- NRG 101 - Introduction to Energy Management 3 Credit(s)

- NRG 110 - Energy Efficiency Industry Software Applications 4 Cr
- NRG 111 - Residential/Light Commercial Energy Analysis 3 Credit(s)
- NRG 112 - Commercial Energy Use Analysis 4 Credit(s)
- NRG 121 - Air Conditioning System Analysis 3 Credit(s)
- NRG 122 - Commercial Air Conditioning System Analysis 3 Credit(s)
- NRG 123 - Energy Control Strategies 4 Credit(s)
- NRG 124 - Energy Efficiency Methods 4 Credit(s)
- NRG 131 - Lighting Fundamentals 3 Credit(s)
- NRG 142 - Energy Accounting 3 Credit(s)
- NRG 181 - Direct Digital Controls 1 4 Credit(s)
- NRG 182 - Commercial HVAC Controls 4 Credit(s)
- NRG 183 - Controls Retuning and Troubleshooting 4 Credit(s)
- NRG 184 - Direct Digital Controls 2 4 Credit(s)
- NRG 185 - Lighting Controls 4 Credit(s)

Beginning Programming (4 credits) - Complete one of the following:

- CS 133JS - Beg. Programming: JavaScript 4 Credit(s)
- CS 161C - Computer Science 1 4 Credit(s)
- CS 161N - Computer Science 1 4 Credit(s)
- CS 161P - Computer Science 1 4 Credit(s)
- CS 275 - Basic Database SQL 4 Credit(s)

Notes

- This program follows Associate of Applied Science (AAS) Requirements unless otherwise specified.
- Completion of MTH 065 or MTH 070 (or Program Coordinator permission) must be obtained prior to enrolling in the program.
- MTH 095 or higher may be taken any term but must be completed by the end of the first year.
- WR 121, WR 227, and Human Relations may be taken any term.
- All NRG courses are offered fully online.
- LCC may not offer Physics online. To learn more and for alternative options, please check with your Academic Advisor.
- Deviation from the prescribed course sequence will impact a student's ability to complete the program in a two year time frame. Please contact Program Coordinator and/or Academic Advisor to determine prescribed course sequence.
- For transfer opportunities and university partnerships, check with your Academic Advisor. There may be variations in courses needed.

Licensing and Certification

Association of Energy Engineers Certified Energy Manager In Training (EMIT).

Apprenticeship Option

The Building and Controls Apprenticeship (BECA) is a new Oregon State Bureau of Labor and Industries (BOLI) approved apprenticeship program. BECA consists of two required components:

- **Related Training:** online instruction through the LCC Energy Management Building Controls Technician program which results in the above AAS degree.
- **On-the-job (OJT) work experience:** 2,000 hours of work experience that begins after the first year of classroom instruction and is paid for by the Training Agent (employer). Advancement through the 2,000 hours includes incrementally increased compensation after each of four 500 hours of OJT.

Additionally, BECA recommends but does not require, that completers take a comprehensive cumulative exam administered by The Association of Energy Engineers (AEE). The AEE Certified Energy Manager (CEM) ANSI 17024 Accredited exam is the most sought-after credential in the Energy Efficiency industry. More information can be found at <https://inside.lanecc.edu/science/energy-management-building-controls>

Fabrication/Welding Technology, AAS

Length: 90 credits

Program Contacts:

- Offered by: Advanced Technology
- Program Coordinator: Doug Ford, forddo@lanecc.edu, 541-463-5498
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Estimated Cost: \$18,740

- Resident Tuition: \$12,195*
- Technology Fees: \$1,170
- General Student Fees: \$813**
- Online Course Fee: (if applicable)
- Books / Course Materials: \$629 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$3,000 (course fees)
- Other Cost / Expenses: \$800*** (tools)
- Differential Fees: \$133 **** (if applicable)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to prepare graduates for employment in entry-level and higher positions in metal fabrication industries. Graduates will begin work in light or heavy metal fabrication as welders and/or fabricators. Training and experience can lead to careers in technical sales, supervision, estimating, quality control, inspection, specialty welding, and teaching, as well as self-employment. The Fabrication/Welding Certificate Program (the first year of the two-year degree) prepares graduates for employment as Welders/Fabricators. The Welding Processes Certificate Program prepares graduates for employment as Welder-Trainees or Welders.

Students who complete this program will be able to:

- PLO 1 - Apply knowledge of forming, fitting, and welding processes
- PLO 2 - Demonstrate entry-level fabrication techniques and multiple welding processes including GTAW, SMAW, GMAW, FCAW, PAC, OAC structural and pipefitting, metallurgy, and quality control procedures. Use appropriate library and information resources to research professional issues and support lifelong learning
- PLO 3 - Use blueprint-reading skills, cost estimating, applied science of materials, and mathematics necessary to the profession
- PLO 4 - Demonstrate and use industry safety standards
- PLO 5 - Use mathematical formulas to calculate area, volume, and weight of metal objects

Program Requirements

General Education

General Ed courses must be completed with a grade of C- or better, or Pass.

Writing (3-4 credits) - Complete one of the following:

- WR 115W - Introduction to College Writing: Workplace Emphasis
- WR 115 - Introduction to College Composition
- Any WR course higher than WR 115

Math (4-5 credits) - Complete one of the following:

- MTH 085 - Applied Geometry for Technicians
- MTH 097 - Geometry
- MTH 112 - Trigonometry

Human Relations (3-4 credits) - Complete one of the following:

- BA 278 - Leadership and Team Dynamics
- CG 100 - College Success
- CG 203 - Human Relations at Work
- COMM 130 - Business and Professional Communication
- COMM 218 - Interpersonal Communication
- COMM 219 - Small Group Communication
- COMM 260 - Introduction to Conflict Management 4 Credit(s)
- COMM 296 - Communication in Healthcare Settings 4 Credit(s)

Program Core Courses

Program Core courses must be completed with a letter grade of C- or better, P/NP is not accepted. It is recommended students complete the math requirement prior to taking core courses.

- WLD 112 - Fabrication/Welding 1 12 Credit(s)
- WLD 113 - Fabrication/Welding 2 12 Credit(s)
- WLD 114 - Fabrication/Welding 3 12 Credit(s)
- WLD 215 - Fabrication/Welding 4 12 Credit(s)
- WLD 216 - Fabrication/Welding 5 12 Credit(s)
- WLD 217 - Fabrication/Welding 6 12 Credit(s)

Welding Lab / Shop Safety / Co-op (3 credits) - Complete one of the following:

- WLD 142 - Pipe Welding Lab: Carbon Steel 3 Credit(s)
- ENGR 280W - Co-op Ed: Welding 3-12 Credit(s)
- MFG 101 - Safety and Basic Shop Practice 3 Credit(s)

Program Electives

Program Electives - **Complete 5 credits** from the Advanced Technology Directed Elective List below. WLD courses must be completed with a letter grade of C- or better. P/NP is not accepted. WLD 139 is only offered P/NP, and must be completed with a Pass grade. All other Electives must be completed with a grade of C- or better, or Pass.

Advanced Technology Directed Elective List

Some courses in the list below may already appear as requirements in some programs. In these instances, they cannot be taken twice nor counted in two areas. Please choose different electives. The courses that are program core courses are notated in the list as:

C = required in Construction

Dr = required in Drafting

Dt = required in Diesel Technology

- APR 101 - Trade Skills Fundamentals 4 Credit(s)
- APR 105 - Electrical Wiring for the Trades 4 Credit(s)
- APR 106 - Plumbing Trade Introduction 2 Credit(s)
- ART 117 - Basic Design: 3-Dimensional 3 Credit(s)
- ART 216 - Digital Design Tools 3 Credit(s)
- BA 101 - Introduction to Business 4 Credit(s)
- BT 165 - Introduction to the Accounting Cycle 4 Credit(s)
- CH 150 - Preparatory Chemistry 3 Credit(s)
- CIS 140W - Intro to Operating Systems: Windows Clients 4 Credit(s)
- CIS 195 - Web Authoring 1 4 Credit(s)
- COOP 206 - Co-op Ed: Internship Seminar 1-2 Credit(s) ^{Dr}
- CS 120 - Concepts of Computing: Information Processing 4 Credit(s)
- CS 179 - Introduction to Computer Networks 4 Credit(s)
- CST 110 - Blueprint Reading 1 3 Credit(s) ^C
- CST 111 - Construction Orientation and Environment 2 Credit(s) ^C
- CST 116 - Construction Estimating 4 Credit(s) ^C
- CST 118 - Building Construction 1-5 Credit(s) ^C
- CST 119 - Building Construction Surveying 3 Credit(s) ^C
- CST 201 - Sustainable Building Practices 3 Credit(s)
- CST 211 - Blueprint Reading 2 3 Credit(s) ^C
- DRF 160 - Computer-Aided Drafting and Design 4 Credit(s)

- DRF 205 - Drafting: Structures 4 Credit(s) ^{C,D} Dr
- DRF 207 - Drafting: Strength of Materials 4 Credit(s) ^{Dr}
- DRF 210 - Commercial Buildings 4 Credit(s) ^{Dr}
- DRF 220 - Building Information Modeling 4 Credit(s) ^{Dr}
- DS 154 - Heavy Duty Braking Systems 1-12 Credit(s) ^{Dt}
- DS 257 - Diesel Electrical Systems 1-12 Credit(s) ^{Dt}
- DS 259 - Diesel Engines and Engine Overhaul 1-12 Credit(s) ^{Dt}
- ET 129 - Electrical Theory 1 4 Credit(s)
- ET 130 - Electrical Theory 2 1-4 Credit(s)
- G 101 - Earth's Dynamic Interior 4 Credit(s) or G 102, G 103, G 146
- GIS 151 - Digital Earth 4 Credit(s)
- GIS 245 - GIS 1 4 Credit(s)
- HE 152 - Drugs, Society and Behavior 3 Credit(s)
- HE 252 - First Aid 3 Credit(s)
- MFG 101 - Safety and Basic Shop Practice 3 Credit(s) ^{Dt}
- MTH 060 - Beginning Algebra 4 Credit(s)
- MTH 075 - Applied Algebra for Technicians 4 Credit(s)
- MTH 085 - Applied Geometry for Technicians 4 Credit(s)
- MTH 095 - Intermediate Algebra 5 Credit(s)
- MUL 101 - Introduction to Media Arts 3 Credit(s)
- MUL 212 - Digital Imaging 4 Credit(s)
- NRG 121 - Air Conditioning System Analysis 3 Credit(s)
- NRG 124 - Energy Efficiency Methods 4 Credit(s)
- PH 101 - Fundamentals of Physics 4 Credit(s) or PH 102, PH 103, PH 201, PH 202, PH 203
- RTEC 105 - Introduction to Advanced Technology 3 Credit(s)
- SPAN 101 - Spanish, First-Year 5 Credit(s)
or SPAN 102, SPAN 103, SPAN 201, SPAN 202, SPAN 203
- WATR 101 - Introduction to Water Resources 3 Credit(s)
- WLD 111 - Blueprint Reading for Welders 3 Credit(s)
- WLD 121 - Shielded Metal Arc Welding 1 (stick welding) 1-4 Cr ^{Dt}
- WLD 122 - Shielded Metal Arc Welding 2 (stick welding) 1-4 Cr ^{Dt}
- WLD 139 - Welding Lab 1-3 Credit(s)
- WLD 140 - Welder Qualification (Cert): Wire Drive Processes 3 Cr
- WLD 141 - Welder Qualification (Cert): SMAW 3 Credit(s)
- WLD 143 - Wire Drive Welding 1 1-4 Credit(s) ^{Dt}
- WLD 151 - Fundamentals of Metallurgy 1-3 Credit(s)
- CST 298 - Independent Study: Construction 1-12 Credit(s) (instructor approval only)
- DRF 298 - Independent Study: Drafting 1-12 Credit(s) (instructor approval only)

Notes

- This is the parent program for the Fabrication/Welding Technology, 1-yr Certificate.
- This program follows the Associate of Applied Science (AAS) Requirements unless otherwise specified.
- A high school diploma or equivalent is recommended for all applicants to this program.
- Cooperative Education (Co-op): Co-op offers students college credit and a grade for on-the-job work experience related to their educational and career goals. In certain circumstances, co-op experience may be substituted for major course work. For more information, see your Academic Advisor or Program Coordinator.
- This program is articulated with Oregon Institute of Technology, which requires a higher-level math course than is required for the program. Contact an Academic Advisor for help with transfer to OIT.

Graphic Design, AAS

Length: 90 credits

Program Contacts

- Offered by the Arts & Humanities Division
- Faculty Coordinator: Media Arts Department, artshumanities-office@lanecc.edu
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu
- Cooperative Education: <https://www.lanecc.edu/programs-academics/internships-cooperative-education>

Estimated Cost: \$ 18,053

- Resident Tuition: \$ 11,925*
- Technology Fees: \$ 1,170
- General Student Fees: \$ 813**
- Online Course Fee: \$ 140 (If applicable)
- Books / Course Materials: \$ 1,200 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$ 1,065 (Course Fees)
- Other Cost / Expenses: \$ 1,740*** (Computer / Internet, adobe software)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to prepare graduates for entry-level positions in the fields of graphic and digital design.

Students who complete this program will be able to:

PLO 1 - Design a variety of graphic materials including advertising, corporate identity, publications, packaging, signage, marketing, and web graphics

PLO 2 - Solve graphic communication problems through the use of computer technology used in the field

PLO 3 - Demonstrate understanding of fundamental art, communication, and marketing principles in the development of design solutions

PLO 4 - Demonstrate understanding of professional business standards and practices

PLO 5 - Demonstrate ability to design and produce materials that will meet professional standards for reproduction

PLO 6 - Use appropriate library and information resources to research design problems, issues, and technology, as well as, to support lifelong technical learning

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PLO 6 - Use appropriate library and information resources to research design problems, issues, and technology, as well as, to support lifelong technical learning

- CG 100 - College Success 1-3 Credit(s)
- CG 203 - Human Relations at Work 1-3 Credit(s)
- COMM 130 - Business & Professional Communication 4 Credit(s)
- COMM 218 - Interpersonal Communication 4 Credit(s)
- COMM 219 - Small Group Communication 4 Credit(s)
- COMM 260 - Introduction to Conflict Management 4 Credit(s)
- COMM 296 - Communication in Healthcare Settings 4 Credit(s)

Program Core Courses

Program Core courses must be completed with a grade of C- or better, or Pass.

- ART 115 - Basic Design: Fundamentals 3 Credit(s)
- ART 116 - Basic Design: Color 3 Credit(s)
- ART 119 - Typography 1 3 Credit(s)
- ART 216 - Digital Design Tools 3 Credit(s)
- ART 225 - Digital Illustration 3 Credit(s)
- ART 289 - Web Production 3 Credit(s)
- ART 290 - Design Concepts for the Web 3 Credit(s)
- MUL 105 - Digital Photography 4 Credit(s)
- MUL 110 - Introduction to Graphic Design 1 Credit(s)
- MUL 205 - Design Studio 3 Credit(s)
- MUL 212 - Digital Imaging 4 Credit(s)
- MUL 220 - Intermediate Typography 3 Credit(s)
- MUL 227 - Graphic Design Literacy 3 Credit(s)

Drawing 1 (3 credits) - Complete the following:

- ART 131 - Introduction to Drawing 3 Credit(s)

Drawing 2 (3-4 credits) - Complete one of the following:

- ART 231 - Drawing: Intermediate 3 Credit(s)
- ART 234 - Drawing: Figure 3 Credit(s)
- ART 237 - Illustration 1 3 Credit(s)
- ART 240 - Natural Science Drawing 3 Credit(s)
- ART 245 - Drawing for Media 4 Credit(s)

Graphic Design and Production (23 credits):

- MUL 228 - Graphic Design 1 4 Credit(s)
- MUL 229 - Graphic Design 2 4 Credit(s)
- MUL 230 - Graphic Design 3 4 Credit(s)
- MUL 231 - Graphic Design Production 1 3 Credit(s)
- MUL 232 - Graphic Design Production 2 4 Credit(s)
- MUL 233 - Graphic Design Production 3 4 Credit(s)

Cooperative Education

Cooperative Education courses must be completed with a grade of C- or better, or Pass. **Complete 6 credits of Cooperative Education.**

- MUL 280GD - Co-op Ed: Graphic Design 3-12 Credit(s)

Electives

Electives must be completed with a grade of C- or better, or Pass. **Complete 5 credits of Electives.** Choose any combination of courses from the following subject list (see complete course listing for info about specific courses):

- ARH - Art History
- ART - Art
- AUD - Audio Production
- CINE - Cinema Studies
- FA - Film Arts
- J - Journalism
- MDP - Multimedia Production
- MUL - Multimedia
- VP - Video Production

Notes

- This program follows the Associate of Applied Science (AAS) Requirements unless otherwise specified.

- Cooperative Education (Co-op) offers students college credit and a grade for on-the-job work experience related to their educational and career goals. Contact Teresa Hughes, Graphic Design Cooperative Education Coordinator, Bldg. 18, Rm. 222, 541-463-3179, hughest@lanecc.edu
- Students using lower-credit courses to meet General Education requirements may need to take additional credits to meet the 90-credit minimum.

Health Information Management (online), AAS

Length: 92 credits

Program Prerequisites: 12 credits

Program Contacts

- Offered by Health Professions
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu
- Project Specialist: Kathy Torvik; torvikk@lanecc.edu
- Cooperative Education: <https://www.lanecc.edu/programs-academics/internships-cooperative-education>

Estimated Cost for Program: \$19,992

- Resident Tuition: \$12,190*
- Technology Fees: \$1,196
- General Student Fees: \$813 **
- Online Course Fee: \$920 (if applicable)
- Books / Course Materials: \$3,324 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$149 (application fee, background check, drug/alcohol screening, American Data Bank-COMPLIO account)
- Other Cost / Expenses: \$1,500*** (if applicable for computer/internet)

Estimated Cost for Prerequisites: \$2,273

- Resident Tuition: \$1,590*
- Technology Fees: \$156
- General Student Fees: \$407**
- Online Course Fee: \$120 (if applicable)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives). Any prerequisites required prior to the entry of the program will be listed separately.

** General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program, which can be completed entirely online, is to prepare individuals to work in the field of health information management (HIM). HIM is a diverse yet evolving field that incorporates medicine, management, finance, information technology and law into one dynamic career path. Graduates will be prepared to manage paper and electronic medical records, collect, aggregate, analyze, summarize and disseminate individual and aggregate clinical data. HIM professionals also protect and control the security and quality of records as well as supervise data entry and technical maintenance personnel. The HIM program includes instruction in: clinical and biomedical science data and information requirements; database management; data coding and validation; information security; quality control; health information content and structure; medical business procedures; legal requirements, as well as HIM professional standards.

Students who complete this program will be able to:

- PLO 1 - Apply critical and creative thinking, problem solving, and effective inter-professional communication skills related to health information management
- PLO 2 - Apply principles of healthcare privacy, confidentiality, legal, ethical issues

and data security

PLO 3 - Apply quantitative and qualitative methodologies to process healthcare information

PLO 4 - Demonstrate knowledge of dynamic healthcare delivery systems and regulatory environments

PLO 5 - Demonstrate knowledge of healthcare billing, coding and reimbursement policies

PLO 6 - Demonstrate knowledge of healthcare terminology and medical conditions

PLO 7 - Evaluate, use, and integrate information technology to support medical decision making and processes

PLO 8 - Demonstrate the application of information technology in the HIM environment

PLO 9 - Demonstrate the principles of leadership and management in the HIM environment

Admission Information

Students are admitted three times per year (fall, winter, and spring terms).

Admission is restricted and is based on a program application. Please see the admissions and application information at <https://www.lanec.edu/programs-academics/areas-study/health-medical-and-fitness/health-information-management/health-information-management>

Program Requirements

Prerequisites

Prerequisites must be completed with a letter grade of C or better. P/NP is not accepted.

The following courses must be completed prior to applying for the Health Information Management program.

Writing (4 credits) - Complete one of the following:

- WR 115 - Introduction to College Composition 4 Credit(s)
- WR 115W - Introduction to College Writing: Workplace Emphasis 3 Credit(s)
- Any WR course higher than WR 115

Mathematics (4 credits):

- MTH 060 - Beginning Algebra 4 Credit(s) or higher

Computer Literacy (4 credits) - Complete one of the following:

- CIS 101 - Computer Fundamentals 4 Credit(s)
- CS 120 - Concepts of Computing: Information Processing 4 Credit(s)

Program Core Courses

Program Core courses must be completed with a letter grade of C or better. P/NP is not accepted. HP 110 satisfies the Human Relations requirement.

- CIS 125D - Software Tools 1: Databases 4 Credit(s)
- HIM 107 - Integrated Electronic Health Records 4 Credit(s)
- HIM 114 - Introduction to Medical Coding 4 Credit(s)
- HIM 120 - Introduction to Health Info Management 3 Credit(s)
- HIM 154 - Introduction to Disease Processes 4 Credit(s)
- HIM 160 - Healthcare Insurance and Billing 4 Credit(s)
- HIM 183 - Introduction to Health Information Systems 4 Credit(s)
- HIM 200 - Healthcare Statistics 3 Credit(s)
- HIM 210 - Leadership for Health Info Management 4 Credit(s)
- HIM 222 - Reimbursement Methodologies 4 Credit(s)
- HIM 230 - Quality Improvement in Healthcare 4 Credit(s)
- HIM 241 - Health Information Management Applications 1 4 Credit(s)
- HIM 242 - Health Information Management Applications 2 4 Credit(s)
- HIM 260 - Medical Record Auditing 4 Credit(s)
- HIM 270 - ICD-10 Coding 5 Credit(s)
- HIM 271 - ICD-10-PCS Coding 5 Credit(s)
- HIM 273 - CPT and HCPCS Coding 5 Credit(s)
- HP 100 - Medical Terminology 1 3 Credit(s)
- HP 110 - Health Office Procedures 3 Credit(s)
- HP 150 - Human Body Systems 1 3 Credit(s)
- HP 152 - Human Body Systems 2 3 Credit(s)
- HP 153 - Introduction to Pharmacology 3 Credit(s)

- HP 220 - Legal and Ethical Aspects of Healthcare 3 Credit(s)

Cooperative Education

Cooperative Education and Seminar must be completed with a letter grade of C or better. P/NP is not accepted.

- **Seminar (2 credits):**
 - COOP 206 - Co-op Ed: Internship Seminar
- **Cooperative Education (3 credits):**
 - HIM 280 - Co-op Ed: Health Information Management

Notes

- This is the parent program for Health Information Management: Medical Coding (online), CPC.
- This program follows the Associate of Applied Science (AAS) Requirements unless otherwise specified.
- Students can take all Program Core courses prior to admission except COOP 206, HIM 222, HIM 270, HIM 271, HIM 273, and HIM 280.
- All program prerequisites with the subject prefix CIS, CS, and HP must be completed no more than five years prior to HIM program acceptance. The prerequisites with CIS, CS, and HP prefixes can possibly be waived with current work experience in an HIM related field.
- All program prerequisites can be completed online.
- Coding and Reimbursement classes (HIM 114, HIM 270, HIM 271, HIM 273, and HIM 222) must be completed within five years of the start of the governing catalog.
- Students who have completed the Health Information Management: Medical Coding (online), CPC may use the HIM coding sequence (HIM 270, HIM 271, and HIM 273) plus one Computer Literacy course (CIS 101 or CS 120) to meet the HIM 114 - Introduction to Medical Coding requirement. See your Academic Advising team or Program Coordinator for more details about course substitutions and/or waivers.
- Completion of BI 231, BI 232, and BI 233 with a C or higher is an acceptable equivalent for HP 150 and HP 152.
- BT 120 - MS WORD for Business can be used to meet the Computer Literacy requirement if completed prior to Summer 2020 (when the program's prerequisites changed).
- Students who do not meet reading and/or math requirements may apply to PASS Lane Summer programming for alternative admission process. PASS Lane contact is Marcia Koenig (koenigm@lanec.edu), Bldg. 11/244, 541-463-5818.
- Cooperative Education is required for students to earn their HIM AAS degree. Students must complete a minimum of 3 credits (108 hours) of on-the-job work experience related to their educational and career goals. Through Co-op, students connect theory and practice, develop skills, expand career knowledge, and make professional contacts for the future. Work schedules and work sites vary. Students are required to be admitted into the HIM Program, complete a minimum of two thirds of their program coursework, have their coop requirements met, and have instructor approval prior to registering.

Accreditation

The Health Information Management Program is accredited by the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM).

Human Services, AAS

Length: 90 credits

Program Contacts

- Offered by the Social Science Division
- Program Coordinator: Susan Shipp, shipps@lanec.edu, 541-463-5231
- Academic Advising: <https://www.lanec.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanec.edu

- Cooperative Education: <https://www.lanec.edu/programs-academics/internships-cooperative-education>

Estimated Cost: \$15,888

- Resident Tuition: \$11,925*
- Technology Fee: \$1,170
- General Student Fees: \$813**
- Online Course Fees: \$80 (if applicable)
- Books/Course Materials: \$1,900 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanec.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to provide education and internship to prepare students for entry-level employment in the human services field. Human service workers provide a wide range of emotional and practical support services aimed at addressing the needs of people facing a variety of challenges. Within the Associate of Applied Science (AAS) degree, there is a General Human Services Track for students seeking a broad range of experience and a Children/Families track designed for those who would like to focus specifically on working with this population. Embedded within the AAS degree is a Career Pathway Certificate in Addiction Studies which prepares students for state certification in addiction counseling through Mental Health and Addiction Certification Board (MHACBO). For information on the certification process visit the MHACBO website: <http://www.mhacbo.org/en>. Students enrolled in Human Services courses may continue their education and transfer to bachelor programs in related helping fields such as family and human services, psychology, or social work. Students interested in transfer options and/or state certification options should work closely with program advising staff to select appropriate courses to reach their education and career goals.

Students who complete this program will be able to:

- PLO 1 - Practice professional and ethical standards inherent in the human services field
- PLO 2 - Utilize skills of attending behavior, active listening, effective questioning techniques that align with theoretical orientations in the helping fields, while working with both individuals and groups
- PLO 3 - Exhibit competence in working with people from diverse backgrounds
- PLO 4 - Conduct various assessments with regard to eligibility, service needs and problem resolution, commonly used in the human services field
- PLO 5 - Develop a plan of action for clients using a strengths-based approach to link people with community resources
- PLO 6 - Utilize technology and digital resources for educational and career purposes
- PLO 7 - Communicate effectively with others, both verbally and in writing
- PLO 8 - Describe current best practices in the field of human services and demonstrate the ability to implement these practices at the entry level

Program Requirements

General Education

General Ed courses must be completed with a grade of C- or better, or Pass.

Writing (8 credits) - Complete both of the following:

- WR 121_H / WR 121 - Academic Composition
- WR 122_H / WR 122 - Argument, Research and Multimodal Composition

Mathematics (3 credits):

- MTH 025 - Basic Mathematics Applications or higher

Science / Math / Computer Science (3-4 credits) - Complete one course from the following list:

- Science/Math/Computer Science

Communications (4 credits) - Complete one of the following:

- COMM 100 - Basic Communication
- COMM 111_H / COMM 111 - Fundamentals of Public Speaking
- COMM 112 - Persuasive Speech
- COMM 130 - Business and Professional Communication
- COMM 218 - Interpersonal Communication (Recommended if pursuing Child and Family track)
- COMM 219 - Small Group Communication

Health (3-4 credits) - Complete one of the following:

- HE 152 - Drugs, Society and Behavior 3 Credit(s)
- HE 209 - Human Sexuality 3 Credit(s)
- HE 240 - Holistic Health 3 Credit(s)
- HE 250 - Personal Health 3 Credit(s)
- HE 252 - First Aid 3 Credit(s)
- HE 255 - Global Health and Sustainability 4 Credit(s)
- HE 275 - Lifetime Health and Fitness 3 Credit(s)

Social Science and Education - Complete 9 credits from ONE of the following tracks:

- **General Human Services Track - Choose from the following:**
 - PSY 201 - General Psychology 4 Credit(s)
 - PSY 202 - General Psychology 4 Credit(s)
 - PSY 203 - General Psychology 4 Credit(s)
 - PSY 212 - Learning and Memory 3 Credit(s)
 - PSY 215 - Lifespan Developmental Psychology 4 Credit(s)
 - PSY 239 - Introduction to Abnormal Psychology 3 Credit(s)
 - SOC 108A - Selected Topics in Women's Studies, Women's Bodies, Women's Selves 3 Credit(s)
 - SOC 204_H / SOC 204 - Introduction to Sociology 4 Credit(s)
 - SOC 205 - Social Stratification and Social Systems 4 Credit(s)
 - SOC 206 - Institutions and Social Change 4 Credit(s)
 - SOC 210 - Marriage, Family, and Intimate Relations 4 Credit(s)
 - SOC 211 - Social Deviance 3 Credit(s)
 - SOC 213 - Race and Ethnicity 4 Credit(s)
 - SOC 218 - Sociology of Gender 4 Credit(s)
 - Any lower-division PSY or SOC transfer course (3-credit minimum), with the exception of courses numbered 199/299, 198/298, or 280.
- **Children and Families Track - Choose from the following:**
 - HDFS 226 - Child Development 3 Credit(s)
 - HDFS 227 - Children Under Stress 3 Credit(s)
 - ED 233 - Adolescent Learning and Development 3 Credit(s)
 - ED 258 - Multicultural Education 3 Credit(s)
 - ED 269 - Inclusion and Special Needs 3 Credit(s)

Program Core Courses

Program Core courses must be completed with a letter grade of C- or better. P/NP is not accepted. HS 150 satisfies the Human Relations requirement.

- HS 102 - Psychopharmacology 4 Credit(s)
- HS 150 - Personal Effectiveness for Human Service Workers 3 Credit(s)
- HS 155 - Interviewing Theory and Techniques 3 Credit(s)
- HS 201 - Introduction to Human Services 3 Credit(s)
- HS 224 - Group Counseling Skills 3 Credit(s)
- HS 226 - Ethics and Law 3 Credit(s)
- HS 231 - Advanced Interviewing and Counseling 3 Credit(s)
- HS 232 - Cognitive-Behavioral Strategies 3 Credit(s)
- HS 265 - Casework Interviewing 3 Credit(s)
- HS 266 - Case Management 3 Credit(s)
- HS 267 - Cultural Competence in Human Services 3 Credit(s)

Cooperative Education

Cooperative Education must be completed with a grade of C- or better. P/NP is not accepted. HS 150 - Personal Effectiveness for Human Service Workers is required, and HS 226 - Ethics and Law is recommended prior to enrollment in Cooperative Education. Complete 18 credits of Cooperative Education - choose from:

- HS 280 - Cooperative Education: Human Services
- HS 280AS - Cooperative Ed: Human Services - Addiction Studies

Program Electives

Program Electives must be completed with a letter grade of C- or better. P/NP is not accepted.

Complete 8 credits from ONE of the following Tracks:

- **General Human Services Track - Choose from the following:**
 - HS 158 - Trauma: Theory to Practice 2 Credit(s)
 - HS 209 - Crisis Intervention and Prevention 3 Credit(s)
 - HS 220 - Prevention 1: Preventing Substance Abuse and Other Social Problems 3 Credit(s)
 - HS 221 - Co-occurring Disorders 3 Credit(s)
 - HS 222 - Best Practices in Human Services: Interventions 4 Credit(s)
 - HS 228 - HIV/AIDS and other Infectious Diseases: Risk Assessment and Intervention 2 Credit(s)
 - HS 229 - Grief and Loss Across Life Span 3 Credit(s)
 - CJA 200 - Introduction to Criminology 4 Credit(s)
 - CJA 201 - Juvenile Delinquency 3 Credit(s)
- **Children and Families Track - Choose from the following:**
 - ECE 105 - Health and Safety Issues in Early Childhood Education 2 Credit(s)
 - ECE 230 - Family, School, Community Relations 3 Credit(s)
 - ECE 253 - Diversity Issues in Early Childhood Education 3 Credit(s)
 - ED 230 - Language and Literacy 3 Credit(s)
 - HDF5 228 - Young Children with Special Needs 3 Credit(s)
 - HS 158 - Trauma: Theory to Practice 2 Credit(s)
 - HS 209 - Crisis Intervention and Prevention 3 Credit(s)
 - HS 220 - Prevention 1: Preventing Substance Abuse and Other Social Problems 3 Credit(s)
 - HS 221 - Co-occurring Disorders 3 Credit(s)
 - HS 229 - Grief and Loss Across Life Span 3 Credit(s)

Notes

- This program follows Associate of Applied Science (AAS) Requirements unless otherwise specified.
- This is the parent program for the Human Services: Addiction Studies, CPC.
- HS 155 - Interviewing Theory and Techniques must be completed prior to enrollment in HS 231, HS 232, HS 265, and HS 266.
- A total of 18 credits of Cooperative Education are required to complete this degree. Students may use either of the following toward meeting this requirement: HS 280 - Cooperative Education: Human Services or HS 280AS - Cooperative Education: Human Services - Addiction Studies. Under certain conditions, Cooperative Education coursework in Psychology, Sociology, and Service Learning may also be used to meet this requirement. Please speak with your Co-op Coordinator prior to enrolling.
- HS 150 - Personal Effectiveness for Human Service Workers *must* be completed prior to enrollment in Cooperative Education. HS 226 - Ethics and Law is recommended prior to enrollment in Cooperative Education.
- Cooperative Education: Students are required to attend a co-op orientation prior to beginning their field placement. Contact the Human Services Cooperative Education Coordinator. Co-op Office: coop-office@lanecc.edu (541) 463-5203.

Industrial Mechanics and Maintenance Technology Apprenticeship, AAS

Length: 90 credits

Program Contacts

- Offered by Advanced Technology
- Program Coordinator: Joy Crump, crumpj@lanecc.edu, 541-463-5496
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Estimated Cost: \$14,037

- Resident Tuition: \$9,010*
- Technology Fees: \$884
- General Student Fees: \$1,085**
- Online Course Fee: \$40 (if applicable)
- Books / Course Materials: \$2,000 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$1,018 (Fabrication-Welding Program fee, Electronics Class fee)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>.

* Resident tuition is based on all program requirements (general education, core, directed electives). Any prerequisites required prior to the entry of the program will be listed separately.

** General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to provide a structured system of training in millwright trades or occupations, leading to certification and journey-level status, only for apprentices who are sponsored by individual employers, accepted by a Joint Apprenticeship Training Committee, and registered with the State of Oregon Bureau of Labor and Industries.

Students who complete this program will be able to:

- PLO 1 - Perform the duties and responsibilities of the millwright trade
- PLO 2 - Develop machine shop skills in troubleshooting
- PLO 3 - Demonstrate and use industry safety standards
- PLO 4 - Identify mechanical and/or electrical industrial systems
- PLO 5 - Develop attitudes conducive to improved customer relations skills in the millwright trade
- PLO 6 - Develop communication and critical thinking skills necessary for job advancement
- PLO 7 - Use appropriate library and information resources to research professional issues and support lifelong learning
- PLO 8 - Access library, computing, and communications services, and appropriately select information and data from regional, national, and international networks
- PLO 9 - Apply appropriate formulas to mathematical situations
- PLO 10 - Adapt to new job requirements to qualify for advancement in becoming lead supervisors

Admission Information

Admission to the millwright trade is usually conducted as an internal process with the employer. Information is available at the Oregon Bureau of Labor and Industries website: boli.state.or.us.

Program Requirements

General Education

General Ed courses must be completed with a grade of C- or better, or Pass.

Writing (4 credits):

- WR 115 - Introduction to College Composition 4 Credit(s) or higher

Math (4 credits):

- MTH 085 - Applied Geometry for Technicians

Human Relations (3-4 credits) - Complete one of the following:

- BA 278 - Leadership and Team Dynamics 4 Credit(s)
- CG 100 - College Success 1-3 Credit(s)
- CG 203 - Human Relations at Work 1-3 Credit(s)
- COMM 130 - Business and Professional Communication 4 Credit(s)
- COMM 218 - Interpersonal Communication 4 Credit(s)
- COMM 219 - Small Group Communication 4 Credit(s)
- COMM 260 - Introduction to Conflict Management 4 Credit(s)
- COMM 296 - Communication in Healthcare Settings 4 Credit(s)

Program Core Courses

Program Core courses must be completed with a letter grade of C or better. P/NP is not accepted.

Millwright (39 credits)

- APR 150 - The Millwright and Shop Safety 5 Credit(s)
- APR 151 - Millwright Machine Theory and Trade Calculations 5 Credit(s)
- APR 152 - Millwright: Power Transmissions and Boilers-Steam 5 Credit(s)
- APR 185 - Shielded Metal Arc Welding 1 1-4 Credit(s) (take 2 credits of APR 185)
- APR 186 - Wire Drive Welding 1 1-4 Credit(s) (take 2 credits of APR 186)
- APR 250 - Millwright: Industrial Print Reading, Schematics, and Estimating 5 Credit(s)
- APR 251 - Millwright: Pneumatics and Lubrications 5 Credit(s)
- APR 252 - Hydraulics for Millwrights 5 Credit(s)
- APR 253 - Millwright Piping Systems 5 Credit(s)

Journey Level Card from Oregon BOLI (22 credits)

Students who obtain a State of Oregon Apprenticeship Training Journey Level Card or Oregon Bureau of Labor and Industries Apprenticeship and Training Division (BOLI-ATD) Certificate of Completion will be awarded 22 Credits.

Program Electives

Program Electives must be completed with a grade of C- or better, or Pass.

Complete credits to meet 90 total credits for the program (17-19 credits).

Select courses from the list below. Contact your Academic Advisor or

Program Coordinator for help determining electives.

- APR 190 - Electrical Theory 1 1-4 Credit(s)
- APR 101 - Trade Skills Fundamentals 4 Credit(s)
- CNC 101 - CNC Concepts 3 Credit(s)
- CNC 102 - CNC Setup and Operation 3 Credit(s)
- CNC 103 - CNC Programming 3 Credit(s)
- DRF 160 - Computer-Aided Drafting and Design 4 Credit(s)
- CS 120 - Concepts of Computing: Information Processing 4 Credit(s)
- HE 252 - First Aid 3 Credit(s)
- MTH 112 - Trigonometry 5 Credit(s)
- WLD 151 - Fundamentals of Metallurgy 1-3 Credit(s)
- WLD 154 - Wire Drive Welding 2 1-4 Credit(s)
- WLD 122 - Shielded Metal Arc Welding 2 (stick welding) 1-4 Credit(s)
- WLD 139 - Welding Lab 1-3 Credit(s)
- WLD 140 - Welder Qualification (Cert): Wire Drive Processes 3 Credit(s)
- WLD 141 - Welder Qualification (Cert): SMAW 3 Credit(s)
- Any course(s), 100-level or higher, selected from the Approved Discipline Studies Courses for Associate Degrees and Oregon Transfer Module lists.

Notes

- This program follows Associate of Applied Science (AAS) Requirements.

- This is the parent program for the Industrial Mechanics and Maintenance Technology Apprenticeship, 1-yr Certificate and Industrial Mechanics and Maintenance Technology Apprenticeship: Trade Worker Apprenticeship Technologies, CPC.
- Complete 8000 hours State of Oregon-approved on-the-job training and provide a State of Oregon Apprenticeship Training Journey-level card or BOLI-ATD Certificate of Completion.
- This program is articulated with Oregon Institute of Technology, which requires a higher-level math course than is required for the program. Contact your Academic Advisor for help with transfer to OIT.
- Students using lower-credit courses to meet General Education requirements may need to take additional Electives to meet the 90-credit minimum.

Licensing and Certification

An apprenticeship "Award of Completion" issued by the Oregon Bureau of Labor and Industries Apprenticeship and Training Division certifies that an individual has been trained in all aspects of an occupation and has met the requirements for program completion. This certificate is recognized throughout Oregon and industry-wide as a valid indicator of high quality, standardized training, and it provides on-the-job training documentation for community college credit. In addition, the Oregon community college Industrial Mechanics and Maintenance Technology Apprenticeship pathway provides statewide transfer opportunities, ladder certificates of completion, and an optional transfer path into Oregon Institute of Technology Bachelor of Science degree in Operations Management or Bachelor of Applied Science degree in Technology and Management. The Industrial Mechanics and Maintenance Technology Apprenticeship pathway includes an advising guide with a set of recommended courses that satisfy both the AAS and the Oregon Transfer Module (OTM). Students who complete the recommended set of OTM courses may apply for 45 credits of guaranteed block transfer to any other community college.

Multimedia Design and Production: Animation Option, AAS

Length: 94 credits

Program Contacts

- Offered by the Arts & Humanities Division
- Faculty Coordinator: Media Arts Department, artshumanities-office@lanecc.edu
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu
- Cooperative Education: <https://www.lanecc.edu/programs-academics/internships-cooperative-education>

Estimated Cost: \$ 18,490

- Resident Tuition: \$ 12,455*
- Technology Fees: \$ 1,222
- General Student Fees: \$ 813**
- Online Course Fee: \$ 160 (If applicable)
- Books / Course Materials: \$ 1,200 (Some courses use Open Educational Resources (OER), which are free or use low-cost materials)
- Program Specific Fees: \$ 900
- Other Cost / Expenses: \$ 1,740*** (Computer/Internet, Adobe Software)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Tuition and fee estimates are based on the prior academic year's rates. Course tuition and fees may change during the year. Learn more and view updated tuition and fee information at lanecce.edu/esfs/credit-tuition.

Program Learning Outcomes

The purpose of this program is to prepare graduates for entry-level positions in media arts industries and careers in multimedia design and animation.

Students who complete this program will be able to:

PLO 1 - Develop and apply effective visual design and production strategies for time based media: Use established and evolving industry standard methods and technologies to produce, manipulate, and process digital animation content for business, education, and entertainment

PLO 2 - Use effective time management and communication /collaboration strategies, as an individual and as a team member to create and produce animation and multimedia projects from conception to final product

PLO 3 - Draw using traditional methods and digital technology and software

PLO 4 - Ethically and responsibly create media, with attention to professional standards for copyright, fair use, and documentation

PLO 5 - Use appropriate resources to research animation tools and technologies, media and design innovations, and support lifelong technical and conceptual learning

Program Requirements

General Education

General Ed courses must be completed with a grade of C- or better, or Pass.

Writing (4 credits) - Complete the following:

- WR 121 - Academic Composition (or WR 121_H)

Math (4-5 credits) - Complete one of the following:

- MTH 098 - Math Literacy
- MTH 060 - Beginning Algebra
- Any Mathematics course higher than MTH 060

Human Relations (3-4 credits) - Complete one of the following:

- BA 278 - Leadership and Team Dynamics 4 Credit(s)
- CG 100 - College Success 1-3 Credit(s)
- CG 203 - Human Relations at Work 1-3 Credit(s)
- COMM 130 - Business and Professional Communication 4 Credit(s)
- COMM 218 - Interpersonal Communication 4 Credit(s)
- COMM 219 - Small Group Communication 4 Credit(s)
- COMM 260 - Introduction to Conflict Management 4 Credit(s)
- COMM 296 - Communication in Healthcare Settings 4 Credit(s)

Program Core Courses

Program Core courses must be completed with a grade of C- or better, or Pass.

- ART 115 - Basic Design: Fundamentals 3 Credit(s)
- ART 131 - Introduction to Drawing 3 Credit(s)
- ART 216 - Digital Design Tools 3 Credit(s)
- ART 234 - Drawing: Figure 3 Credit(s) or ART 286 - Sculpting for Animators 3 Credit(s)
- ART 245 - Drawing for Media 4 Credit(s)
- FA 221 - Computer Animation 4 Credit(s)
- FA 222 - Computer Animation 2 4 Credit(s)
- FA 250 - Concepts of Visual Literacy 3 Credit(s)
- FA 261 - Writing and Interactive Design 3 Credit(s)
- MDP 246 - Multimedia Production 1 4 Credit(s)
- MDP 247 - Multimedia Production 2 4 Credit(s)
- MUL 101 - Introduction to Media Arts 3 Credit(s)
- MUL 103 - Time-Based Tools 4 Credit(s)
- MUL 119 - Introduction to Animation 3 Credit(s)
- MUL 208 - Motion Capture for Animation 4 Credit(s)
- MUL 210 - Multimedia Design 3 Credit(s)
- MUL 212 - Digital Imaging 4 Credit(s)
- MUL 218 - Business Practices for Media Arts 3 Credit(s)

- MUL 223 - Digital Sculpting and Texture 3 Credit(s)
- MUL 224 - Digital Painting 3 Credit(s)

Cooperative Education

Cooperative Ed must be completed with a grade of C- or better, or Pass.

Complete 6 credits of Cooperative Education.

- MDP 280 - Co-op Ed: Multimedia 3-12 Credit(s)

Electives

Program Electives must be completed with a grade of C- or better, or Pass.

Complete 9 credits of program electives. Choose any combination of courses from the following list (see complete course listing for information about specific courses):

- CIS 125G - Software Tools 1: Game Development 4 Credit(s)
- CIS 135G - Software Tools 2: Game Development 4 Credit(s)

Or any course(s) from the following subject areas:

- ARH - Art History
- ART - Art
- AUD - Audio Production
- CINE - Cinema Studies
- FA - Film Arts
- J - Journalism
- MDP - Multimedia Production
- MUL - Multimedia
- VP - Video Production

Notes

- This degree is 70% contained in the Multimedia Design, AAS.
- This program follows Associate of Applied Science (AAS) Requirements unless otherwise specified.
- Cooperative Education (Co-op) Opportunities to work directly in media industries as interns are provided by the Co-op program. Second-year students will work with professional production teams to gain experience producing a variety of interactive multimedia products. Contact Teresa Hughes, Multimedia Design Co-op Coordinator, Bldg. 18, Rm. 222, 541-463-3179, hughest@lanecce.edu.
- Students using lower-credit courses to meet General Education requirements may need to take additional credits to meet the 90-credit minimum.
- Students have access to state-of-the-art digital labs and equipment, but many students elect to purchase personal technology such as computers, cameras, digital drawing tools, and software.

Multimedia Design, AAS

Length: 91 credits

Program Contacts

- Offered by the Arts & Humanities Division
- Faculty Coordinator: Media Arts Department, artshumanities-office@lanecce.edu
- Academic Advising: <https://www.lanecce.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecce.edu
- Cooperative Education: <https://www.lanecce.edu/programs-academics/internships-cooperative-education>

Estimated Cost: \$ 18,144

- Resident Tuition: \$ 12,058*
- Technology Fees: \$ 1,183
- General Student Fees: \$ 813**
- Online Course Fee: \$ 200 (If applicable)
- Books / Course Materials: \$ 1,200 (Some courses use Open Educational Resources (OER), which are free or use low-cost materials)
- Program Specific Fees: \$ 950 (Course Fees)

- Other Cost / Expenses: \$ 1,740*** (Computer/Internet, Adobe Software)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanec.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to prepare graduates for entry-level positions in media arts industries and careers in multimedia design and production.

Students who complete this program will be able to:

PLO 1 - Research, develop, and create effective content in a variety of digital media specialties

PLO 2 - Demonstrate innovative use of concepts, techniques and tools in one or more media disciplines

PLO 3 - Work productively, independently and as a team member, in the creation, pre-production, production, post-production, and distribution of multimedia projects from conception to final product

PLO 4 - Demonstrate an understanding of the issues related to ethical and responsible media creation, including professional standards for copyright, fair use, and documentation

PLO 5 - Research, evaluate, and use evolving media tools and technologies and sustain on-going technical and conceptual learning

PLO 6 - Produce, organize, and present creative content to demonstrate the requisite knowledge, skills, and abilities for professional and/or educational advancement

Program Requirements

General Education

General Ed courses must be completed with a grade of C- or better, or Pass.

Writing (4 credits) - Complete the following:

- WR 121 - Academic Composition (or WR 121_H)

Math (4-5 credits) - Complete the following:

- MTH 098 - Math Literacy 5 Credit(s)
- MTH 060 - Beginning Algebra 4 Credit(s)
- Any Mathematics course higher than MTH 060

Human Relations (3-4 credits) - Complete one of the following:

- BA 278 - Leadership and Team Dynamics 4 Credit(s)
- CG 100 - College Success 1-3 Credit(s)
- CG 203 - Human Relations at Work 1-3 Credit(s)
- COMM 130 - Business and Professional Communication 4 Credit(s)
- COMM 218 - Interpersonal Communication 4 Credit(s)
- COMM 219 - Small Group Communication 4 Credit(s)
- COMM 260 - Introduction to Conflict Management 4 Credit(s)
- COMM 296 - Communication in Healthcare Settings 4 Credit(s)

Program Core Courses

Program Core courses must be completed with a grade of C- or better, or Pass.

- ART 115 - Basic Design: Fundamentals 3 Credit(s)
- ART 216 - Digital Design Tools 3 Credit(s)
- ART 245 - Drawing for Media 4 Credit(s)
- ART 288 - Introduction to Web Design and Social Media 3 Credit(s)
- AUD 120 - Audio Production 4 Credit(s)
- FA 221 - Computer Animation 4 Credit(s)
- FA 250 - Concepts of Visual Literacy 3 Credit(s)
- FA 261 - Writing and Interactive Design 3 Credit(s)
- MDP 246 - Multimedia Production 1 4 Credit(s)
- MDP 247 - Multimedia Production 2 4 Credit(s)

- MUL 101 - Introduction to Media Arts 3 Credit(s)
- MUL 103 - Time-Based Tools 4 Credit(s)
- MUL 105 - Digital Photography 4 Credit(s)
- MUL 210 - Multimedia Design 3 Credit(s)
- MUL 212 - Digital Imaging 4 Credit(s)
- MUL 218 - Business Practices for Media Arts 3 Credit(s)
- VP 151 - Video Production 1: Camera 3 Credit(s)

Choose one focus area and complete two courses (6 credits):

1. Audio/Video Focus

- FA 254 - Fundamentals of Lighting 3 Credit(s)
- VP 152 - Video Production 2: Editing 3 Credit(s)

2. Photography Focus

- FA 256 - Lighting for Photography 3 Credit(s)
- MUL 215 - Digital Photography 2 3 Credit(s)

Cooperative Education

Cooperative Ed must be completed with a grade of C- or better, or Pass.

Complete 6 credits of Cooperative Education.

- MDP 280 - Co-op Ed: Multimedia 3-12 Credit(s)

Electives

Program Electives must be completed with a grade of C- or better, or Pass.

Complete 9 credits of program electives. Choose any combination of courses from the following list (see complete course listing for information about specific courses):

- CIS 125G - Software Tools 1: Game Development 4 Credit(s)
- CIS 195 - Web Authoring 1 4 Credit(s)
- CS 120 - Concepts of Computing: Information Processing 4 Credit(s)
- CS 133JS - Beg. Programming: JavaScript 4 Credit(s)
- CS 161C - Computer Science 1 4 Credit(s)
- CS 161N - Computer Science 1 4 Credit(s)
- CS 161P - Computer Science 1 4 Credit(s)
- CS 162C - Computer Science 2 4 Credit(s)
- CS 162N - Computer Science 2 4 Credit(s)
- CS 162P - Computer Science 2 4 Credit(s)
- CS 295N - Web Development 1: ASP.NET 4 Credit(s)

Or any course(s) from the following subject areas:

- ARH - Art History
- ART - Art
- AUD - Audio Production
- CINE - Cinema Studies
- FA - Film Arts
- J - Journalism
- MDP - Multimedia Production
- MUL - Multimedia
- VP - Video Production

Notes

- This is the parent program for Multimedia Design, 1-yr Certificate and Multimedia Design and Production: Animation Option, AAS
- This program follows Associate of Applied Science (AAS) Requirements unless otherwise specified.
- Cooperative Education (Co-op) Opportunities to work directly in media industries as interns are provided by the Co-op program. Second-year students will work with professional production teams to gain experience producing a variety of interactive multimedia products. Contact Teresa Hughes, Multimedia Design Co-op Coordinator, Bldg. 18, Rm. 222, 541-463-3179, hughest@lanec.edu.
- Students using lower-credit courses to meet General Education requirements may need to take additional credits to meet the 90-credit minimum.

- Computer programming languages: Students who complete more than one CS 161 or CS 162 programming language course should be aware that transfer institutions may count multiple 161 or 162 courses as repeats, **and may not accept them in transfer**. Students wishing to complete multiple programming courses should first take a CS 161/162 series and then enroll in CS 133/233 course series for any subsequent programming languages.

Music Technology and Sound Engineering, AAS

Length: 90 credits

- Offered by the Arts and Humanities Division
- Program Coordinator: Seth Mulvihill, mulvihills@lanecc.edu, 541-463-5184
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Estimated Cost: \$ 17,226

- Resident Tuition: \$ 11,925*
- Technology Fees: \$ 1,170
- General Student Fees: \$ 813**
- Online Course Fee: \$ 30
- Books / Materials: \$ 1,200 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$ 2,088.00 (Music, Music Tech and Individual Music Lessons Fees)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to meet the training and experience needs of new college students, current industry professionals and artists who work with recording equipment, recording studios, and music technology equipment. The program also includes a robust emphasis on musicianship, including one year of music theory, lessons and performance experience. This AAS degree covers essential skills used in the audio world and provides hands on experience with state of the art hardware and software. The experience and skills will allow graduates to more easily attain positions in the industry or assist them in starting their own small businesses. The foundation of musicianship and music theory will also allow motivated graduates to further their studies at a number of universities and colleges that offer music technology or electronic music undergraduate degrees, such as University of Oregon and Bushnell University.

Students who complete this program will be able to:

PLO 1 - Utilize MIDI networks and MIDI sequencers

PLO 2 - Utilize software and hardware for recording, editing, and processing music and audio for commercial and artistic purposes

PLO 3 - Communicate using technical vocabulary associated with MIDI, audio, and synthesis of sound

PLO 4 - Select appropriate microphones, preamplifiers, and other outboard signal processors for various recording techniques and microphone placement

PLO 5 - Analyze audio recordings in terms of frequency, stereo field, phase cancellation, and dynamic range

PLO 6 - Engineer and produce high quality recording sessions for music,

advertising, voiceovers, video and film soundtracks, and other types of projects

PLO 7 - Do creative work through working with deadlines and scheduling time with clients and artists

PLO 8 - Apply knowledge of music theory and musicianship using keyboards,

and/or other instruments, in the context of music making and/or the recording studio

Program Requirements

General Education

General Ed courses must be completed with a grade of C- or better, or Pass.

Writing (4 credits) - Complete one of the following:

- WR 115 - Introduction to College Composition
- Any WR course higher than WR 115

Math (4-5 credits) - Complete one of the following:

- MTH 060 - Beginning Algebra
- Any MTH course higher than MTH 060

Human Relations (3-4 credits) - Complete one of the following:

- BA 278 - Leadership and Team Dynamics 4 Credit(s)
- CG 100 - College Success 1-3 Credit(s)
- CG 203 - Human Relations at Work 1-3 Credit(s)
- COMM 130 - Business and Professional Communication 4 Credit(s)
- COMM 218 - Interpersonal Communication 4 Credit(s)
- COMM 219 - Small Group Communication 4 Credit(s)
- COMM 260 - Introduction to Conflict Management 4 Credit(s)
- COMM 296 - Communication in Healthcare Settings 4 Credit(s)

Program Core Courses

All Music Fundamentals, Music Core, and MIDI/Sound Engineering courses must be completed with a grade of C- or better. P/NP not accepted. Students must take a music theory placement test prior to enrollment in the Music Core, which is offered by the Performing Arts Department. Depending on music theory placement, some students may skip MUS 101 - Music Fundamentals and MUS 131 - Group Piano and replace them with Electives.

Music Fundamentals (5 credits) - Complete both of the following:

- MUS 101 - Music Fundamentals 3 Credit(s)
- MUS 131 - Group Piano 2 Credit(s)

Music Core 1, Fall (8 credits) - Complete all of the following:

- MUS 111 - Music Theory 1 (First Term) 4 Credit(s)
- MUS 114 - Sight-reading and Ear Training (First Term) 2 Credit(s)
- MUS 127 - Keyboard Skills 1 (First Term) 2 Credit(s)

Music Core 2, Winter (8 credits) - Complete all of the following:

- MUS 112 - Music Theory 1 (Second Term) 4 Credit(s)
- MUS 115 - Sight-reading and Ear Training (Second Term) 2 Credit(s)
- MUS 128 - Keyboard Skills 1 (Second Term) 2 Credit(s)

Music Core 3, Spring (8 credits) - Complete all of the following:

- MUS 113 - Music Theory 1 (Third Term) 4 Credit(s)
- MUS 116 - Sight-reading and Ear Training (Third Term) 2 Credit(s)
- MUS 129 - Keyboard Skills 1 (Third Term) 2 Credit(s)

MIDI / Audio Engineering (19 credits) - Complete all of the following:

- MUS 118 - Music Technology MIDI/Audio 1 4 Credit(s)
(MUS 118 must be completed prior to enrollment in MUS 119 & MUS 107)
- MUS 119 - Music Technology MIDI/Audio 2 4 Credit(s)
(MUS 119 must be completed prior to, or concurrently with MUS 107)
- MUS 107 - Audio Engineering 1 3 Credit(s) * Fall
(MUS 107 must be completed prior to enrollment in MUS 109)
- MUS 109 - Audio Engineering 2 4 Credit(s) * Winter
(MUS 109 must be completed prior to enrollment in MUS 110)
- MUS 110 - Audio Engineering 3 4 Credit(s) * Spring

Ensemble

Ensemble courses must be completed with a grade of C- or better, or Pass.

Complete 12 credits from the following:

- MUS 291 - Chamber Choir 2 Credit(s)
- MUS 293 - Jazz Combos 2 Credit(s)
- MUS 294 - Jazz Ensemble 2 Credit(s)
- MUS 295 - Symphonic Band 2 Credit(s)

- MUS 297 - Concert Choir 2 Credit(s)

Music Lessons

Individual Lessons must be completed with a letter grade of C- or better. P/NP is not accepted. Group Lessons must be completed with a letter grade of C- or better, or Pass.

Required - Individual Lessons (3 credits):

- All students must complete 3 credits over 3 terms of Individual Lessons (MUP 100- or 200-level). See course listings for options.

Required - Individual / Group Lessons (3-4 credits):

- All students must complete an additional 3-4 credits of Individual Lessons (MUP 100- or 200-level), Group Lessons (options listed below), or a combination of both.

Group Lesson Options:

- MUS 134 - Group Voice 2 Credit(s)
- MUS 137 - Group Guitar 2 Credit(s)
- MUS 138 - Group Guitar 2 2 Credit(s)

Program Electives

Program Electives must be completed with a grade of C- or better, or Pass. Note: Students may use up to 3 credits of General Electives (any course 100-level or higher) toward meeting the Program Elective requirement.

Program Electives (13 credits) - Choose from the following:

Recommended:

- AUD 120 - Audio Production 4 Credit(s)
- BA 101 - Introduction to Business 4 Credit(s)
- BA 281 - Personal Finance 4 Credit(s)
- BT 165 - Introduction to the Accounting Cycle 4 Credit(s)

Program Elective Options:

- MUS 103 - Songwriting Techniques and Analysis 1 3 Credit(s)
- MUS 134 - Group Voice 2 Credit(s)
- MUS 137 - Group Guitar 2 Credit(s)
- MUS 138 - Group Guitar 2 2 Credit(s)
- MUS 161 - Jazz Improvisation: Instrumental 2 Credit(s)
- MUS 201 - Exploring Music: Introduction to Music History 3 Credit(s)
- MUS 202 - Exploring Music: Introduction to Music History 3 Credit(s)
- MUS 203 - Exploring Music: Introduction to Music History 3 Credit(s)
- MUS 205 - Introduction to Jazz History
- MUS 211 - Music Theory 2: (First Term) 3 Credit(s)
- MUS 212 - Music Theory 2 (Second Term) 3 Credit(s)
- MUS 213 - Music Theory 2 (Third Term) 3 Credit(s)
- MUS 214 - Keyboard Skills 2 (First Term) 2 Credit(s)
- MUS 215 - Keyboard Skills 2 (Second Term) 2 Credit(s)
- MUS 216 - Keyboard Skills 2 (Third Term) 2 Credit(s)
- MUS 224 - Sight-reading and Ear Training (First Term) 2 Credit(s)
- MUS 225 - Sight-reading and Ear Training (Second Term) 2 Cr
- MUS 226 - Sight-reading and Ear Training (Third Term) 2 Credit(s)
- MUS 260 - History of Hip-Hop and Rap Music 3 Credit(s)
- MUS 264 - Roots of Rock (Roots-1963) 4 Credit(s)
- MUS 265 - Golden Age of Rock & Roll (1964-1974) 4 Credit(s)
- MUS 266 - Rockin' the New Millennium (1974-2006) 4 Credit(s)
- MUS 268 - History of Electronic Music 3 Credit(s)

Notes

- This program follows the Associate of Applied Science (AAS) Requirements unless otherwise specified.
- This is the parent program for the Music Technology and Sound Engineering: MIDI and Audio Production, CPC and Music Technology and Sound Engineering: MIDI Production, CPC.
- Students must take a music theory placement test prior to enrollment in the Music Core. The music theory placement test is offered by the Performing Arts Department. Depending on music theory placement,

some students may skip MUS 101 - Music Fundamentals and MUS 131 - Group Piano and replace them with Electives.

- The following courses are limited to the total number of credits listed:
 - MUP 100- and 200-level - 6 credits
 - MUS 134 - Group Voice - 6 credits
 - MUS 137 - Group Guitar - 6 credits
 - MUS 138 - Group Guitar 2 - 6 credits
- There is a limit of 12 credits total for MUS 134 - Group Voice, MUS 137 - Group Guitar, and MUS 138 - Group Guitar 2, or any combination of the three.

Nursing, AAS

Program Length: 90 credits

Program Prerequisites: 45 credits

Program Contacts

- Offered by the Health Professions
- Program Coordinator: Maggie Kruit, kruitm@lanecc.edu, 541-463-5753
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu
- Cooperative Education: <https://www.lanecc.edu/programs-academics/internships-cooperative-education>

Estimated Cost for Program: \$35,408

- Resident Tuition: \$11,925*
- Technology Fees: \$1,170
- General Student Fees: \$813**
- Online Course Fee: (if applicable)
- Books / Course Materials: \$1,100 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$3,535 (certifications-licensure-exams, health insurance, application fee, background check, drug/alcohol screening, CPR, Kaplan/DocuCare/ELNEC learning modules, and American Data Bank account)
- Other Cost / Expenses: \$1,995*** (nursing kit, uniforms/stethoscope/shoes, uniform laundry, ID badge, computer)
- Differential Fees: \$14,870****

Estimated Cost for Prerequisites: \$6,954

- Resident Tuition: \$5,963*
- Technology Fees: \$585
- General Student Fees: \$407**
- Online Course Fee: (if applicable)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives). Any prerequisites required prior to the entry of the program will be listed separately.

** General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to prepare the graduate to practice as an associate degree registered nurse, to be eligible to take the National Council Licensure Examination (NCLEX)-RN. Acceptance to the program allows for co-admission to Lane Community College and Oregon Health Sciences University nursing programs for completion of a BSN degree.

Learning Outcomes: Nursing care competencies recognize that a competent nurse provides safe care across the lifespan directed toward the goals of helping clients (individuals, families or communities) promote health, recover from acute illness and/or manage a chronic illness and support a peaceful and comfortable death. As a member of the Oregon Consortium for Nursing Education the Lane Nursing curriculum supports the following nursing competencies.

Students who complete this program will be able to:

PLO 1 - Patient-centered Care: Incorporate novice level management skills while providing patient-centered care

PLO 2 - Quality and Safety: Execute nursing care that minimize risk or harm to patients, self, and others, and use data to monitor outcomes of patient-centered care

PLO 3 - Clinical Decision-Making: Formulate clinical judgments when providing nursing care based on current evidence, clinical expertise, and patient preferences, needs and values

PLO 4 - Professionalism: Execute nursing care that reflects integrity, accountability, and legal and ethical practice while modeling the professional roles of coordinator-of-care, educator, advocate and leader

PLO 5 - Informatics and Technology: Execute nursing care using current technology and patient information to maximize safety and optimize health

PLO 6 - Teamwork and Collaboration: Communicate effectively and collaboratively in a self-directed manner with patients, families and members of the healthcare team

Admission Information

For information about the Nursing program, available options, and application packet, please see the following:

- Main website: <https://www.lanecce.edu/programs-academics/academic-departments/health-professions-health-and-physical-education/nursing-programs>
- RN application: <https://www.lanecce.edu/programs-academics/areas-study/health-medical-and-fitness/registered-nurse/application-information>
- LPN to RN Bridge information: <https://www.lanecce.edu/hp/nursing/pn-rn-bridge-application-information>

Drug testing, criminal background check, and immunizations are required.

Program Requirements

Program Prerequisites

Program Prerequisites must be completed with a letter grade of C or better. P/NP is not accepted.

Completion of all prerequisites (45 credits) with a continuing GPA of 3.00 or higher by the end of Summer term in the year of acceptance is required for Fall entry.

Required Prerequisites

The following courses are prerequisites required for the Nursing program.

Writing (8 credits) - Complete both of the following:

- WR 121 - Academic Composition 4 Credit(s) (or WR 121_H)
- WR 122 - Argument, Research and Multimodal Composition 4 Credit(s) (or WR 122_H)

NOTE: If students have taken WR 121 and / or WR 122 as 3-credit courses, they must take an additional Writing course to equal a minimum of 8 credits. Take the following three-course, alternative writing sequence:

1. WR 121 (or WR 121_H)
2. WR 122 (or WR 122_H)
3. WR 123 or WR 227 (or WR 227_H)

Mathematics (5 credits)

- MTH 095 - Intermediate Algebra 5 Credit(s)
- Any MTH course above MTH 095

Anatomy & Physiology (12 credits) - Complete all of the following:

- BI 231 - Human Anatomy and Physiology 1 4 Credit(s)
- BI 232 - Human Anatomy and Physiology 2 4 Credit(s)
- BI 233 - Human Anatomy and Physiology 3 4 Credit(s)

Additional Prerequisites (12 or more credits) - Complete all of the following:

- BI 234 - Introductory Microbiology 4 Credit(s)
- FN 225 - Nutrition 4 Credit(s)
- PSY 215 - Lifespan Developmental Psychology 4 Credit(s)
- Electives, as needed, to reach 45 credits. Choose courses from the list of Approved Electives found below.

Recommended Prerequisites

Students are encouraged to take approved electives to enhance their

application and prepare to pursue a BSN. Courses can be taken from Arts and Letters, Social Science and Science/Math/Computer Science. Work with your Academic Advisor to determine courses to take.

Program Core Courses

Program Core courses must be completed with a letter grade of C or better. P/NP is not accepted. Clinical Labs are only offered P/NP and must be completed with a Pass. In order to receive a passing grade in clinicals, students must complete course work at a C grade level or higher. NRS 110A and NRS 115 meet the Human Relations requirement and cannot be substituted.

Biology with Genetics (4 credits) - Complete one of the following:

- BI 101F - General Biology-Survey of Biology 4 Credit(s)
- BI 101K - General Biology: Introduction to Genetics 4 Credit(s)
- BI 112 - Cell Biology for Health Occupations 4 Credit(s)
- BI 211 - Principles of Biology 4 Credit(s)

Foundations of Nursing:

- NRS 110A - Foundations of Nursing-Health Promotion 4 Credit(s)
- NRS 110B - Foundations of Nursing-Health Promotion Clinical Lab 5 Credit(s)
- NRS 111A - Foundations of Nursing in Chronic Illness 1 2 Credit(s)
- NRS 111B - Foundations of Nursing in Chronic Illness 1- Clinical Lab 4 Credit(s)
- NRS 112A - Foundations of Nursing in Acute Care 1 2 Credit(s)
- NRS 112B - Foundations of Nursing in Acute Care 1 Clinical Lab 4 Credit(s)
- NRS 221A - Foundations of Nursing in Chronic Illness 2 and End of Life 4 Credit(s)
- NRS 221B - Foundations of Nursing in Chronic Illness 2 and End-of-Life Clinical Lab 5 Credit(s)
- NRS 222A - Foundations of Nursing in Acute Care 2 and End-of-Life 4 Credit(s)
- NRS 222B - Foundations of Nursing in Acute Care 2 and End-of-Life Clinical Lab 5 Credit(s)

Integrative Practicum:

- NRS 224A - Integrative Practicum 1 2 Credit(s)
- NRS 224B - Integrative Practicum 1 Lab 7 Credit(s)

Clinical Pharmacology:

- NRS 230 - Clinical Pharmacology 1 3 Credit(s)
- NRS 231 - Clinical Pharmacology 2 3 Credit(s)

Pathophysiological Processes:

- NRS 232 - Pathophysiological Processes 1 3 Credit(s)
- NRS 233 - Pathophysiological Process 2 3 Credit(s)

NOTE: LPN to RN Bridge students take NRS 115 - LPN Transition to OCNE (6 credits) in place of NRS 112A and NRS 112B. Taught Spring Term only to LPN Bridge students. Meets Human Relations requirement.

Electives

Approved Electives must be completed with a letter grade of C- or better. P/NP is not accepted. Take electives as needed to complete 90 credits for the Nursing AAS. Work with an Academic Advisor to determine if additional electives are needed.

Can use any 100- or 200-level courses offered by Lane from the following subject areas. Students may also transfer in equivalent 300- to 400- level courses to meet these requirements.

- **Arts & Humanities** -
 - Art History, Communications, Effective Learning (when not taken as part of a developmental writing class), English, Film Arts, Foreign Language, Humanities, Literature, Journalism, Music (non-performance), Philosophy, Religion, Theater Arts (non-performance), Writing (WR 123 or higher)
- **Social Sciences** -
 - Anthropology, BA 101, CJA 200, Economics, Ethnic Studies, Geography, History, Philosophy, Human Development (HD

prefix, not HDFS), Political Science, Psychology, Sociology, Women's Studies

- **Science, Math, Computer Science -**
 - Astronomy, Biology, Botany, Chemistry, Computer Science (CS prefix, not CIS), CJA 214, Engineering, General Science, Geology, Mathematics 100+ level (MTH 243 Statistics for extra points on the application), Physical Science, Physics, Zoology

Limitations:

1. Studio and performing art courses are not accepted as Approved Electives
2. Career-technical education (CTE) courses are not accepted as Approved Electives. See Course Types by Prefix for a list of CTE courses.
3. HP/HO 100 Medical Terminology and Health courses are not accepted as Approved Electives. However, HP/HO 100 Medical Terminology is worth extra points on the application
4. Graduate (500-600) level courses are not accepted as Approved Electives

Notes

- This program follows Associate of Applied Science (AAS) Requirements unless otherwise specified.
- BI 233 and BI 234 course must have been completed within 7 years prior to starting the nursing program.
- Students must be enrolled in the Nursing Program to register for any NRS courses.
- Cooperative Education: Co-op internships may be taken as an optional elective any of the last four terms of the program. Contact the Cooperative Education Coordinator for Nursing.

Licensing and Certification

Nursing Approval: Oregon State Board of Nursing (OSBN) 27938 SW Upper Boones Ferry Rd, Portland, OR, 971.673.0685, <https://www.oregon.gov/OSBN/Pages/index.aspx>. Lane is a member of the Oregon Consortium for Nursing Education (OCNE) and offers a competency-based curriculum. OCNE is a partnership of Oregon nursing programs dedicated to educating future nurses. Faculty from eleven community colleges and six university campuses created - and continue to develop - a shared curriculum taught on all consortium campuses.

Licensing and Certification: Successful graduates will be awarded an Associate Degree in Nursing and be eligible to take the National Council Licensure Examination-RN (NCLEX_RN) which confers licensure as a registered nurse.

Paramedicine, AAS

Length: Program 100 credits

Program Contacts

- Offered by Health Professions
- Program Coordinator: Kris Siewert, siewertk@lanecc.edu, 541-463-3297
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu
- Cooperative Education: <https://www.lanecc.edu/programs-academics/internships-cooperative-education>

Estimated Cost: \$27,792

- Resident Tuition: \$13,250*
- Technology Fees: \$1,300
- General Student Fees: \$949**
- One Time Student Fee: \$30
- Online Course Fee: \$660 (if applicable)
- Books / Course Materials: \$1,050 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)

- Program Specific Fees: \$5,853 (lab/program application fees, EMT & Paramedic licensure/exams, background check/fingerprinting, medical requirements, American DataBank)
- Other Cost / Expenses: \$2,275*** (instrument/tools, uniform/boots, computer)
- Differential Fees: \$2,425****

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives). Any prerequisites required prior to the entry of the program will be listed separately.

** General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to prepare competent entry-level Paramedics in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains with or without exit points at the Advanced Emergency Medical Technician and/or Emergency Medical Technician, and/or Emergency Medical Responder levels. The program assists students in mastering patient assessment and intervention for pre-hospital healthcare providers. Cognitive and psychomotor domains are measured for competency by a combination of written exams, skill demonstration, simulation, scenarios, and clinical and internship experiences. The affective domain is measured for competency using published professional standards. Students must demonstrate a proficient understanding of the Emergency Medical System, medical and traumatic emergencies, anatomy and physiology of the human body, and be able to outline proper interventions for specific emergencies. Additionally, students will be able to function as a member of team, learn and apply leadership techniques, and demonstrate proficiency and understanding of the Department of Transportation objectives for Paramedics.

Students who complete this program will be able to:

PLO 1: Demonstrate personal behaviors consistent with public and employer expectations of professional EMS providers

PLO 2: Demonstrate technical proficiency in the performance of EMS skills

PLO 3: Demonstrate technical proficiency with the operation of EMS equipment

PLO 4: Understand, interpret, apply, evaluate and effectively communicate EMS and general medical knowledge, including anatomy and physiology, necessary to function in a healthcare setting

PLO 5: Communicate effectively and treat the patient with respect, maintain confidentiality, and comply with healthcare laws and ethics

Admission Information

Students are encouraged to consult the Academic Advising Team (EMSPprogram@lanecc.edu) before applying for admission. Program application and information about the point allocation system are available at <https://www.lanecc.edu/hp/emt>.

Program Requirements

General Education

General Edu courses must be completed with a grade of C- or better, or Pass.

Writing (4 credits):

- WR 115 - Introduction to College Composition 4 Credit(s) or higher

Math (4 credits):

- MTH 052 - Math for Health & Physical Sciences 4 Credit(s) or higher

Program Core Courses

Program Core courses must be completed with a letter grade of C- or better. P/NP is not accepted. EMS 102 satisfies the Human Relations requirement.

Note: BI 231 has prerequisites of CH 112 - Chemistry for Health Occupations and BI 112 - Cell Biology for Health Occupations at Lane. Transfer students should contact the Academic Advising team for more information.

Medical Terminology (3 credits):

- HP 100 - Medical Terminology 1 3 Credit(s)

Human Anatomy & Physiology (12 credits):

- BI 231 - Human Anatomy and Physiology 1 4 Credit(s)
- BI 232 - Human Anatomy and Physiology 2 4 Credit(s)
- BI 233 - Human Anatomy and Physiology 3 4 Credit(s)

Emergency Services (23 credits):

- EMS 101 - Introduction to Emergency Services 4 Credit(s)
- EMS 102 - Crisis Intervention 3 Credit(s)
- EMS 103 - Emergency Services Rescue 4 Credit(s)
- EMS 111 - Emergency Medical Technician 8 Credit(s)
- EMS 112 - Emergency Medical Technician Lab 3 Credit(s)
- EMS 113 - Emergency Medical Technician Clinical 1 Credit(s)

Pathophysiology (3 credits):

- EMS 201 - Pathophysiology 3 Credit(s)

Pharmacology (4 credits):

- EMS 211 - Pharmacology 1 2 Credit(s)
- EMS 212 - Pharmacology 2 2 Credit(s)

Paramedic Emergencies (14 credits):

- EMS 221 - Trauma Emergencies 1 3 Credit(s)
- EMS 222 - Trauma Emergencies 2 3 Credit(s)
- EMS 231 - Medical Emergencies 1 3 Credit(s)
- EMS 232 - Medical Emergencies 2 3 Credit(s)
- EMS 233 - Medical Emergencies 3 2 Credit(s)

Electrocardiography (6 credits):

- EMS 241 - Electrocardiography 1 3 Credit(s)
- EMS 242 - Electrocardiography 2 3 Credit(s)

Paramedic Lab (9 credits):

- EMS 251 - Paramedic Lab 1 1-3 Credit(s)
- EMS 252 - Paramedic Lab 2 1-3 Credit(s)
- EMS 253 - Paramedic Lab 3 1-3 Credit(s)

Paramedic Clinical (8 credits):

- EMS 261 - Paramedic Clinical 1 1 Credit(s)
- EMS 262 - Paramedic Clinical 2 3 Credit(s)
- EMS 263 - Paramedic Clinical 3 4 Credit(s)

Cooperative Education

Cooperative Education courses must be completed with a letter grade of C- or better. P/NP is not accepted.

- **Cooperative Education (10 credits):**
 - EMS 280P1 - Co-op Ed: Paramedic Internship P1 3 Credit(s)
 - EMS 280P2 - Co-op Ed: Paramedic Internship P2 7 Credit(s)

Notes

- This program follows Associate of Applied Science (AAS) Requirements unless otherwise specified.
- Students pursuing a bachelor's degree need to complete a college level, transferable math course (MTH 105 or higher).
- Students who hold current EMT licenses from the Oregon Health Authority (OHA) should contact Academic Advising or the Health Professions office about receiving credit for prior learning towards Lane's Paramedicine program. Credit for current EMT licenses may be awarded for EMS 111, EMS 112, and EMS 113.

Accreditation

The Paramedic Program is nationally accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP).

Licensing and Certification

Students will be eligible to test for national certification and Oregon State licensure following completion of EMT and/or Paramedic training.

Physical Therapist Assistant, AAS

Length Program: 94 credits

Program Prerequisites: 11-16 credits

Program Contacts

- Offered by Health Professions
- Program Coordinator: Christina Howard, PT, MPT, Ed.D., howardc@lanecc.edu, 541-463-5764
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu
- Cooperative Education: <https://www.lanecc.edu/programs-academics/internships-cooperative-education>

Eugene Campus - Estimated Cost for Program: \$21,790 (94 credits)

- Resident Tuition: \$12,455*
- Technology Fees: \$1,222
- General Student Fees: \$922**
- One Time Student Fee: \$30
- Online Course Fee: \$570 (if applicable)
- Books / Course Materials: \$1,100 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$2,114 (certifications-licensure-exams, application fee (\$50.00), background check, drug/alcohol screening, industry student membership)
- Other Cost / Expenses: \$938*** (instruments/tools, uniforms/shoes, etc.)
- Travel: \$500
- Differential Fees: \$1,939****

Estimated Cost for Prerequisites: \$2,599 (16 credits)

- Resident Tuition: \$2,120*
- Technology Fees: \$208
- General Student Fees: \$271**
- Online Course Fee: (if applicable)

Rogue Community College Campus - Estimated Cost for Program: \$26,790 (94 credits)

- Resident Tuition: \$12,455*
- Technology Fees: \$1,222
- General Student Fees: \$922**
- One Time Student Fee: \$30
- Online Course Fee: \$570
- Books / Course Materials: \$1,100 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$2,114 (certifications-licensure-exams, application fee (\$50.00), background check, drug/alcohol screening, industry student membership)
- Other Cost / Expenses: \$938*** (instruments/tools, uniforms/shoes, etc.)
- Travel: \$500
- Distance Campus Fee: \$5,000
- Differential Fees: \$1,939****

Estimated Cost for Prerequisites: \$2,599 (16 credits)

- Resident Tuition: \$2,120*
- Technology Fees: \$208
- General Student Fees: \$271**
- Online Course Fee: (if applicable)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives). Any prerequisites required prior to the entry of the program will be listed separately.

** General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to prepare the graduate to practice as an entry-level, licensed physical therapist assistant (PTA).

Learning Outcomes: Physical Therapist Assistant (PTA) program learning outcomes are based on the guidelines of the Commission on Accreditation in Physical Therapy Education (CAPTE). Program graduates must demonstrate broad, integrative and specialized knowledge, technical and communication skills, and behavior and conduct consistent with entry-level PTA practice. Learning outcomes have a strong emphasis on safely and effectively implementing a plan of care under the direction of a supervising physical therapist. PTAs work under the direction of the supervising physical therapist in promoting wellness, health, and recovery from health conditions that affect the movement system.

Students who complete this program will be able to:

PLO 1 - Support the supervising physical therapist in providing high-quality patient/client-centered physical therapist services

PLO 2 - Effectively communicate (face-to-face, written, or digital), actively listen, collaborate, and respond to all stakeholders with cultural humility

PLO 3 - Use theory, evidence, contextual factors, and clinical judgment to make safe and effective clinical decisions when implementing the supervising physical therapist's plan of care

PLO 4 - Value personal and professional accountability with actions that build a therapeutic alliance and the profession's collective effort to improve the health of society

PLO 5 - Perform selected physical therapy interventions and data collection skills with competence to carry out the physical therapy plan of care

Admission Information

Students are admitted once a year. Admission is restricted and is based on a program application. Please consult <https://www.lanec.edu/programs-academics/areas-study/health-medical-and-fitness/physical-therapist-assistant/physical-therapist-assistant>.

Program Requirements

Program Prerequisites

Program Prerequisites must be completed with a grade of C- or better, or Pass.

Program Prerequisites must be completed prior to applying for the program.

Human Biology (3-4 credits) - Complete one of the following:

Note: Students must complete one of the following courses to apply to the program. Students who complete BI 102I as a prerequisite do not need to take another Human Biology course. If BI 102I is not completed as a prerequisite, students must complete another option (see General Education) prior to the end of Fall Term of Year 1 in the program.

- BI 102I - General Biology-Human Biology 4 Credit(s)
- HP 150 - Human Body Systems 1 3 Credit(s)
- BI 231 - Human Anatomy and Physiology 1 4 Credit(s)

Medical Terminology (3 credits)

- HP 100 - Medical Terminology 1 3 Credit(s)

Physics (4-5 credits) - Complete one of the following:

- PH 101 - Fundamentals of Physics 4 Credit(s)
- PH 102 - Fundamentals of Physics 4 Credit(s)
- PH 201 - General Physics 5 Credit(s)
- GS 104 - Physical Science 4 Credit(s) (no longer offered at Lane) will also be accepted to meet this requirement

Writing (4 credits) - Complete one of the following:

Note: Prior bachelor's degree, verified by a transcript from US accredited institution or higher, may be used to meet the Writing requirement.

- WR 121_H / WR 121 - Academic Composition 4 Credit(s)
- WR 122_H / WR 122 - Argument, Research and Multimodal Composition 4 Credit(s)
- WR 123 - Composition: Research Writing 4 Credit(s)
- WR 227_H / WR 227 - Technical Writing 4 Credit(s)

General Education

General Ed courses must be completed with a grade of C- or better, or Pass.

Mathematics (4 credits)

- MTH 065 - Elementary Algebra 4 Credit(s) or higher

Communication (4 credits) - Complete one of the following:

- COMM 115 - Introduction to Intercultural Communication 4 Credit(s)
- COMM 218 - Interpersonal Communication 4 Credit(s)

Psychology (4 credits) - Complete one of the following:

- PSY 201 - General Psychology 4 Credit(s)
- PSY 202 - General Psychology 4 Credit(s)
- PSY 203 - General Psychology 4 Credit(s)
- PSY 215 - Lifespan Developmental Psychology 4 Credit(s)

Human Biology - Complete one of the following options:

NOTE: Students who complete HP 150 or BI 231 as a prerequisite, need to finish the series. See Options 1 and 2. Students who completed BI 102I as a prerequisite do not need to take another Human Biology course. This requirement must be completed by the end of Fall Term of Year 1 in the program.

- **Option 1: Human Body Systems (3 credits)** - Complete both of the following courses:
 - HP 152 - Human Body Systems 2 3 Credit(s)
- **Option 2: Anatomy & Physiology (8 credits)** - Complete all of the following courses:
 - BI 232 - Human Anatomy and Physiology 2 4 Credit(s)
 - BI 233 - Human Anatomy and Physiology 3 4 Credit(s)

Program Core Courses

HP 153 must be completed with a grade of C- or better, or Pass. All other Program Core courses must be completed for a letter grade of C or better. P/NP is not accepted. PTA 200 meets the Human Relations requirement and cannot be substituted. It is **not recommended** to complete HP 153 in the first term of the program; students should complete this course no later than fall term of their second year.

- HP 153 - Introduction to Pharmacology 3 Credit(s)
- PTA 100 - Introduction to Physical Therapy 3 Credit(s)
- PTA 101 - Introduction to Clinical Practice 1 5 Credit(s)
- PTA 101L - Introduction to Clinical Practice 1 Lab 2 Credit(s)
- PTA 103 - Introduction to Clinical Practice 2 5 Credit(s)
- PTA 103L - Introduction to Clinical Practice 2 Lab 2 Credit(s)
- PTA 104 - PT Interventions-Orthopedic Dysfunctions 5 Credit(s)
- PTA 104L - PT Interventions-Orthopedic Dysfunctions Lab 2 Credit(s)
- PTA 132 - Applied Kinesiology 1 3 Credit(s)
- PTA 132L - Applied Kinesiology 1 Lab 2 Credit(s)
- PTA 133 - Applied Kinesiology 2 3 Credit(s)
- PTA 133L - Applied Kinesiology 2 Lab 2 Credit(s)
- PTA 200 - Professionalism, Ethics, and Exam Preparation 4 Credit(s)
- PTA 201 - Physical Therapy and the Older Adult 2 Credit(s)
- PTA 203 - Contemporary Topics in Physical Therapy 2 Credit(s)
- PTA 204 - PT Interventions - Neurological Dysfunctions 5 Credit(s)
- PTA 204L - PT Interventions - Neurological Dysfunctions Lab 2 Credit(s)
- PTA 205 - PT Interventions - Complex Medical Dysfunctions 4 Credit(s)
- PTA 205L - PT Interventions - Complex Medical Disfunctions Lab 2 Credit(s)

Cooperative Education

Cooperative Education courses must be completed for a letter grade of C or better. P/NP is not accepted.

Seminar (2 credits)

- PTA 206 - Physical Therapist Assistant Seminar 2 Credit(s)

Cooperative Education (18 credits; 6 credits of each clinical experience)

- PTA 280A - Co-op Ed: Physical Therapist Assistant - First Clinical Experience 4-8 Credit(s)
- PTA 280B - Co-op Ed: Physical Therapist Assistant - Second Clinical Experience 4-8 Credit(s)

- PTA 280C - Co-op Ed: Physical Therapist Assistant - Third Clinical Experience 4-8 Credit(s)
Pandemic Adjustment - students can earn a minimum of 13 credits of clinical experience (of the 18 required) and still meet graduation standards, provided they demonstrate entry-level practice standards. Please connect with Beth Thorpe, PTA Cooperative Education Coordinator for more information.

Notes

- This program follows Associate of Applied Science (AAS) Requirements unless otherwise specified.
- The following requirements must meet universal standards order to begin clinical internships Physical examination Tuberculosis (TB) screen Substance abuse screening (10-panel drug and alcohol screen), and Criminal background check
- Cooperative Education (Co-op) is required for second year students enrolled in the Physical Therapist Assistant Program. Students must complete Co-op at a program-designated co-op site. Contact Beth Thorpe, PTA Cooperative Education Coordinator, Bldg. 30, Rm. 126, 541-463-3274, thorpeb@lanecc.edu.

Licensing and Certification

Graduates meet education eligibility for the National Physical Therapist Assistant Examination administered by the Federation of State Boards of Physical Therapy.

Accreditation

The Physical Therapist Assistant program at Lane Community College is accredited by the Commission on Accreditation in Physical Therapy Education (CAPTE).

CAPTE Address: 13030 Potomac Ave., Suite 100, Alexandria, Virginia 22305-3085.

Telephone: 703-706-3245

Email: accreditation@apta.org

Website: capteonline.org

If needing to contact the program/institution directly, please call 541-463-5617 or email healthprofessionsoffice@lanecc.edu.

Sustainability Coordinator, AAS

Length: 90 credits

Program Contacts

- Offered by the Science, Math, and Engineering Division
- Program Coordinator: Luis Maggiori, maggioril@lanecc.edu, 541-463-5884
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu
- Cooperative Education: <https://www.lanecc.edu/programs-academics/internships-cooperative-education>

Estimated Cost: \$16,908

- Resident Tuition: \$11,925*
- Technology Fees: \$1,170
- General Student Fees: \$813**
- Online Course Fee: (if applicable)
- Books / Course Materials: \$3,000 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to prepare students for careers as sustainability professionals in resource management, corporate social responsibility, environmental protection, recycling, pollution prevention and energy, water or waste reduction analysis. Graduates may work for public agencies, school districts, colleges or universities, non-governmental organizations, nonprofit organizations, private businesses or corporations.

Students who complete this program will be able to:

PLO 1 - Demonstrate holistic understanding of interdisciplinary subjects related to sustainability including physical and biological sciences, social and behavioral sciences, economics, the regulatory environment, and business management

PLO 2 - Develop policies that support the triple bottom line of sustainability: healthy economy, healthy environment, and healthy communities

PLO 3 - Obtain information from public and research libraries, online sources, and regional, national, and international networks

PLO 4 - Demonstrate skills in data collection and analysis, statistical analysis, and basic mathematics

PLO 5 - Perform environmental audits, perform laboratory and field tests, conduct and coordinate research, and prepare written reports for internal and external stakeholders

PLO 6 - Demonstrate understanding of the causes and the ecological, social, and economic costs of challenges to sustainability including pollution, climate change, loss of biodiversity, water quality and supply, and human health

PLO 7 - Apply practical and technical strategies to objectives including pollution prevention, climate change reduction, energy conservation and use of alternative energy, efficient resource use, waste reduction and recycling, LEED and other green building tools, water conservation, stormwater and wastewater management, indoor air quality, transportation, closed loop production and life cycle analysis

PLO 8 - Articulate verbal and written understanding of laws and regulations related to sustainable environment, business and community

PLO 9 - Develop and implement action plans based on best practices; coordinate project management goals and tasks

PLO 10 - Conduct public relations and social marketing efforts; develop educational materials; and create community networks and resources to support sustainability practices in business and community

PLO 11 - Demonstrate the ability to organize events, meetings, workshops, conferences and fundraising

PLO 12 - Utilize collaborative team skills in the design and implementation of sustainable practices

Program Requirements

General Education

General Ed courses must be completed with a grade of C- or better, or Pass.

Writing & Communication (8 credits) - Complete WR 121 and one additional course:

- WR 121 - Academic Composition 4 Credit(s) or WR 121_H
- And complete one additional course from the following:
 - **Recommended:** COMM 265 - Environmental Communication 4 Credit(s)
 - COMM 115 - Introduction to Intercultural Comm 4 Credit(s)
 - ENG 240 - Nature Literature 4 Credit(s)
 - WR 227 - Technical Writing 4 Credit(s) or WR 227_H

Math (4-5 credits) - Complete one of the following:

- **Recommended:** MTH 098 - Math Literacy 5 Credit(s)
- MTH 095 - Intermediate Algebra 5 Credit(s)
- or higher math

Human Relations (3-4 credits) - Complete one of the following:

- BA 278 - Leadership and Team Dynamics 4 Credit(s)
- CG 203 - Human Relations at Work 1-3 Credit(s)
- COMM 130 - Business and Professional Communication 4 Credit(s)
- COMM 218 - Interpersonal Communication 4 Credit(s)
- COMM 219 - Small Group Communication 4 Credit(s)

- COMM 260 - Introduction to Conflict Management 4 Credit(s)
- COMM 296 - Communication in Healthcare Settings 4 Credit(s)

Program Core Courses

Program Core courses must be completed with a grade of C- or better, or Pass.

- CST 201 - Sustainable Building Practices 3 Credit(s)
- DRF 211 - Sustainable Building Systems 4 Credit(s)
- HE 255 - Global Health and Sustainability 4 Credit(s)
- BT 120 - MS WORD for Business 4 Credit(s)
- BT 123 - MS EXCEL for Business 4 Credit(s)

Biology (4 credits) - Complete one of the following:

- **Recommended:** BI 103M - General Biology: Biodiversity and Sustainability 4 Credit(s)
- BI 103G - General Biology: Global Ecology 4 Credit(s)
- BI 103J - General Biology: Forest Ecology 4 Credit(s)

Chemistry (4-5 credits) - Complete one of the following:

- **Recommended:** CH 170 - Intro to Environmental Chemistry 4 Credit(s)
- CH 104 - Introduction to General Chemistry 5 Credit(s)

Environmental Science (12 credits)

Terrestrial Environment - Complete one of the following:

- ENSC 181 - Terrestrial Environment 4 Credit(s)
- GS 106 - Earth, Sea, Sky 4 Credit(s)
- SOIL 205 - Introduction to Soil Science 4 Credit(s)

Atmospheric Environment - Complete the following:

- ENSC 182 - Atmospheric Environment and Climate Change 4 Credit(s)

Aquatic Environment - Complete one of the following:

- ENSC 183 - Aquatic Environment 4 Credit(s) or ENSC 183_H
- GS 108 - Oceanography 4 Credit(s)

Earth Science and Geography (8 credits)

Complete one of the following:

- G 102 - Earth's Dynamic Surface 4 Credit(s)
- G 202 - Earth's Surface Systems 4 Credit(s)
- GEOG 141 - Natural Environment 4 Credit(s)

And complete one additional course from the following:

- GEOG 142 - Introduction to Human Geography 4 Credit(s)
- GIS 151 - Digital Earth 4 Credit(s)
- GS 101 - General Science (Nature of the Northwest) 4 Credit(s)

Social Change and Economics (15 credits)

Complete one course from each of the following focus areas: Economics, Health, Political Science, and Sociology.

Economics - Complete one of the following:

- ECON 260 - Introduction to Environmental and Natural Resource Economics 4 Credit(s)
- GEOG 201 - World Regional Geography 4 Credit(s)

Health - Complete one of the following:

- HE 240 - Holistic Health 3 Credit(s)
- HE 250 - Personal Health 3 Credit(s)

Political Science - Complete one of the following:

- PS 211 - Peace and Conflict Studies: Global 4 Credit(s)
- PS 297 - Environmental Politics 4 Credit(s)

Sociology - Complete one of the following:

- SOC 205 - Social Stratification and Social Systems 4 Credit(s)
- SOC 206 - Institutions and Social Change 4 Credit(s)
- SOC 228 - Introduction to Environmental Sociology 4 Credit(s)

Cooperative Education (5 credits)

Cooperative Ed courses must be completed with a grade of C- or better, or Pass.

- Complete 2 credits of COOP 206 - Co-op Ed: Internship Seminar
- Complete 3 credits of IDS 280S - Co-op Ed: Sustainability Coordinator

Program Electives (8-10 credits)

Electives must be completed with a grade of C- or better, or Pass.

- ART 288 - Introduction to Web Design and Social Media 3 Credit(s)
- BT 230 - Sustainable Paperless Practices 4 Credit(s)
- COMM 265 - Environmental Communication 4 Credit(s)
- GIS 245 - GIS 1 4 Credit(s)
- GIS 246 - GIS 2 4 Credit(s)
- GS 201 - Scientific Skepticism - Someone is Wrong on the Internet! 4 Credit(s)
- HE 275 - Lifetime Health and Fitness 3 Credit(s)
- HORT 120 - Gardening and Sustainable Food Systems 4 Credit(s)
- MTH 105 - Math in Society 4 Credit(s)
- MTH 111 - College Algebra 5 Credit(s)
- MTH 243 - Introduction to Probability and Statistics 4 Credit(s)
- NRG 111 - Residential/Light Commercial Energy Analysis 3 Credit(s)
- NRG 112 - Commercial Energy Use Analysis 4 Credit(s)
- NRG 121 - Air Conditioning System Analysis 3 Credit(s)
- NRG 122 - Commercial Air Conditioning System Analysis 3 Credit(s)
- PH 101 - Fundamentals of Physics 4 Credit(s)
- PH 102 - Fundamentals of Physics 4 Credit(s)
- PH 103 - Fundamentals of Physics 4 Credit(s)
- WATR 101 - Introduction to Water Resources 3 Credit(s)
- Any language courses, 100-level or higher, including American Sign Language (ASL), Chinuk Wawa (CW), Mandarin Chinese (CHN), French (FR), or Spanish (SPAN)
- Any course or combination of courses from the General Education or Program Core Course categories not used to meet other program requirements

Notes

- This program follows Associate of Applied Science (AAS) Requirements unless otherwise specified.
- Students who complete GIS 151 to meet the Earth Science and Geography requirement, and GIS 245 and GIS 246 to meet the Elective requirement, will earn the Geographic Information Science, Certificate of Completion.

Water Conservation Technician (online), AAS

Length: 90 credits

Program Contacts

- Offered by the Science, Math, and Engineering Division
- Program Coordinator: Roger Ebbage, ebbager@lanecc.edu, 541-556-7724
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu
- Cooperative Education: <https://www.lanecc.edu/programs-academics/internships-cooperative-education>

Estimated Cost: \$15,008

- Resident Tuition: \$11,925*
- Technology Fees: \$1,170
- General Student Fees: \$813 ** (if applicable)
- Online Course Fees: \$900
- Books / Course Materials: \$200 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to prepare students for a career in Water Conservation. Through this online program individuals learn to evaluate water patterns; develop, implement, market and maintain water conservation programs / perform public outreach; recommend water efficiency techniques; integrate alternative water sources, and perform systems analysis to solve use problems. The graduate will be trained to fill positions such as Water Conservation Program Specialist, Water Resource Specialist, Stormwater Technician, Stewardship Coordinator, Resource Coordinator and many more. Jobs are in the Federal, State, Local, Non-Government and Private Sectors in both profit and non-profit venues.

Students who complete this program will be able to:

PLO 1 - Evaluate indoor and outdoor water use patterns for rural, urban, residential and commercial sites

PLO 2 - Recommend water efficiency measures, wise water landscapes and efficient plumbing solutions

PLO 3 - Design, implement and evaluate and market water conservation programs to a broad audience

PLO 4 - Convey water conservation strategies to a broad audience using multiple communication methods

PLO 5 - Understand regional regulatory context and international code trends as they pertain to water conservation

PLO 6 - Develop basic knowledge of water resource economics and how economics relates to supply and demand

PLO 7 - Understand water distribution, flow and elimination systems; basic hydraulics; quality issues; balance and time of use

PLO 8 - Create technical reports and collect, interpret, display and explain data

PLO 9 - Perform systems analysis using water bills, meters and other evidence to solve problems

Admission Information

For information or to apply, go to lanecc.edu/science/water-conservation-technician

Program Requirements

General Education

General Ed courses must be completed with a grade of C- or better, or Pass. It is recommended that General Education requirements be completed prior to entering the program.

Writing (8 credits) - Complete both of the following:

- WR 121_H / WR 121 - Academic Composition 4 Credit(s)
- WR 227_H / WR 227 - Technical Writing 4 Credit(s)

Math (5 credits) - Complete one of the following:

- MTH 095 - Intermediate Algebra 5 Credit(s)
- MTH 111 - College Algebra 5 Credit(s)
- Any MTH course higher than MTH 111

Human Relations (3-4 credits) - Complete one of the following:

- BA 278 - Leadership and Team Dynamics 4 Credit(s)
- CG 100 - College Success 1-3 Credit(s)
- CG 203 - Human Relations at Work 1-3 Credit(s)
- COMM 130 - Business and Professional Communication 4 Credit(s)
- COMM 218 - Interpersonal Communication 4 Credit(s)
- COMM 219 - Small Group Communication 4 Credit(s)
- COMM 260 - Introduction to Conflict Management 4 Credit(s)
- COMM 296 - Communication in Healthcare Settings 4 Credit(s)

Program Core Courses

Program Core courses must be completed with a grade of C- or better, or Pass.

NOTE: BT 123 has prerequisites of CIS 101 or CS 120 or BT 120, and MTH 065 or higher. Students who have previous computer experience may be able to waive the prerequisite for BT 123. Please check with the Business Department for information about waiving prerequisites for this course.

- BT 123 - MS EXCEL for Business 4 Credit(s)
- ENSC 183 - Aquatic Environment 4 Credit(s)
- GIS 151 - Digital Earth 4 Credit(s)
- GIS 245 - GIS 1 4 Credit(s)
- WATR 101 - Introduction to Water Resources 3 Credit(s)
- WATR 102 - Water Careers Exploration 4 Credit(s)
- WATR 105 - Water Conservation: Residential 4 Credit(s)
- WATR 110 - Codes and Policies of Water 3 Credit(s)
- WATR 154 - Alternative Water Sources 3 Credit(s)
- WATR 202 - Fostering Sustainable Practices 3 Credit(s)
- WATR 210 - Water Conservation: Industrial / Commercial 3 Credit(s)
- WATR 215 - Integrated Water Management 4 Credit(s)
- WATR 220 - Water Conservation: Program Development 4 Credit(s)
- WATR 222 - Stormwater Best Management Practices 4 Credit(s)
- WATR 261 - Regional Water Policy 3 Credit(s)

Environment (4 credits) - Complete one of the following:

- GS 101 - General Science (Nature of the Northwest) 4 Credit(s)
- ENSC 181 - Terrestrial Environment 4 Credit(s)
- ENSC 182 - Atmospheric Environment and Climate Change 4 Credit(s)

Resource Economics (4 credits) - Complete one of the following:

- WATR 150 - Water Resource Economics 4 Credit(s)
- ECON 260 - Introduction to Environmental and Natural Resource Economics 4 Credit(s)

(Note: WATR 150 and ECON 260 do not run every year. Please contact Program Coordinator or Academic Advisor to explore options.)

Cooperative Education

Cooperative Education must be completed with a grade of C- or better, or Pass.

Cooperative Education (6 credits):

- WATR 280 - Co-op Ed: Water Conservation Technician

Program Electives

Program Electives must be completed with a grade of C- or better, or Pass. May be completed online, on campus, or transferred from another institution. Note:

Students may use 1 credit of General Elective (any course 100-level or higher) toward meeting the Program Elective requirement.

Program Electives (6 credits) - Choose from the following:

- ECON 200 - Principles of Economics: Introduction to Economics 3 Credit(s)
- ECON 201 - Principles of Economics: Introduction to Microeconomics 3 Credit(s)
- ECON 202 - Principles of Economics: Introduction to Macroeconomics 3 Credit(s)
- ED 100 - Introduction to Education 3 Credit(s)
- ENSC 181 - Terrestrial Environment 4 Credit(s)
- ENSC 182 - Atmospheric Environment and Climate Change 4 Credit(s)
- MUL 110 - Introduction to Graphic Design 1 Credit(s)
- GIS 246 - GIS 2 4 Credit(s)
- SOC 206 - Institutions and Social Change 4 Credit(s)
- Any Business course 100-level or higher (see Courses for BA and BT options)
- Any Communication course 100-level or higher (see Courses for COMM options)
- Any Multimedia course 100-level or higher (see Courses for MDP and MUL options)
- Any Energy Management course 100-level or higher (see Courses for NRG options)
- Any Spanish course 100-level or higher (see Courses for SPAN options)

Notes

- This program follows Associate of Applied Science (AAS) Requirements unless otherwise specified.
- MTH 098 or MTH 095 may be taken any term but must be completed by the end of the first year.
- WR 121, WR 122, Human Relations, and Electives may be taken any term.
- By completing GIS 246 (as one of the required Directed Electives), students would be eligible for Geographic Information Science, Certificate of Completion.
- Cooperative Education (WATR 280) may be taken summer term.
- All WATR courses are offered fully online.
- Lane Community College does not offer GS 101 online. This course must be taken on campus or transferred from another institution.
- Deviation from the prescribed course sequence will impact a student's ability to complete the program in a two-year time frame. Please contact Program Coordinator and/or Academic Advisor to determine prescribed course sequence.
- **Cooperative Education** provides related field experience to integrate theory and practice while developing skills and exploring career options. Students must complete a minimum of six Co-op credits. Please contact the Cooperative Education Coordinator, Gerry Meenaghan at meenaghan@lanecc.edu

Certificates of Completion

All 1-year and short-term certificate programs follow the Certificate of Completion Requirements unless otherwise specified. See individual certificates for specific program requirements. Certificates of Completion are connected to occupational and/or industry standards and are meant to provide job skills, career training, or occupational readiness. These requirements are meant to be a guide. Individual certificate programs may have specific requirements beyond those listed here, and students must meet the specified requirements in order to receive an award. Certificates of Completion may be aligned with associate degrees. Each student is strongly encouraged to work with a Lane academic advisor or career counselor to match career goals with an appropriate program.

Learning Outcomes

Lane degrees and certificates are aligned with Lane's Core Learning Outcomes and Oregon learning outcomes. View our State General Education Learning Outcomes. Certificates of completion have program-specific outcomes. See Programs (A-Z) for details.

Certificate Requirements

- All courses must be completed with a grade of C- or better, or Pass, unless specified by individual programs.
- If a program has designated a core course as meeting the Human Relations requirement, that course may not be substituted.
- Cumulative GPA must be at least 2.0 when the certificate is awarded.
- Certificates may be 12-108 credits.
- Certificates of less than 45 credits do not require General Education.

General Education: Foundational

Students must complete all requirements with a letter grade of C- or P (Pass), unless otherwise noted in the student's specific certificate program.

Writing

One course, minimum 3 credits as specified by the program, or if not specified, WR 115W, WR 115 (Summer 1999 or after) or higher.

Mathematics

One course, minimum 3 credits as specified by the program, or if not specified, MTH 025 or higher.

Human Relations

Three credits minimum as specified by program, or if not specified, chosen from the Human Relations list.

- BA 278 - Leadership and Team Dynamics 4 Credit(s)

- CG 100 - College Success 1-3 Credit(s)
- CG 203 - Human Relations at Work 1-3 Credit(s)
- COMM 130 - Business and Professional Communication 4 Credit(s)
- COMM 218 - Interpersonal Communication 4 Credit(s)
- COMM 219 - Small Group Communication 4 Credit(s)
- COMM 260 - Introduction to Conflict Management 4 Credit(s)
- COMM 296 - Communication in Healthcare Settings 4 Credit(s)

Program Core Courses

Core coursework varies from program to program and may include a combination of transfer and career technical courses. Please view the Course Types by Prefix list. See individual program information for specific requirements and limitations.

Notes

- College-level courses are numbered 100 or higher. Courses numbered 001-099 are considered skills-based/developmental.
- Courses numbered 180, 197, 199, 280, 297, 298, or 299 count as electives, and do not meet Foundational or Discipline Studies requirements. Courses numbered 199 and 299 are experimental, and may later be reviewed and approved for this program.
- Credit-by-Exam and Credit-by-Assessment may comprise up to 25% of total degree credits.
- See the list of Course Types by Prefix. Policies on accepting career technical credits vary at four-year institutions in Oregon. Consult an academic advisor if considering transferring after earning an AAS.
- Only the Academic Requirements Review Committee (ARRC) may waive a college General Education requirement. Petitions are available from Enrollment Services at <https://www.lanecc.edu/administration/enrollment-services/general-education-substitution-and-waiver-petition>.
- Students may use up to 18 credits of Cooperative Education toward a degree/certificate, with the exception of Occupational Skills programs, which require a minimum of 20 credits of cooperative education. Cooperative Education may be used as part of Program Core Courses, not as General Education.

1-yr Certificates

Business Assistant, 1-yr Certificate

Length: 54 credits

Program Contacts

- Offered by the Business Department
- Program Coordinators: LuAnne Johnson (johnsonlm@lanecc.edu, 541-463-5767) and Tim Hovet (hovett@lanecc.edu, 541-463-5537)
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu
- Cooperative Education: <https://www.lanecc.edu/programs-academics/internships-cooperative-education>

Estimated Cost: \$11,296

- Resident Tuition: \$7,155*
- Technology Fees: \$702
- General Student Fees: \$542**
- Online Course Fee: \$540 (if applicable)
- Books / Materials: \$1,157 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Other Cost / Expenses: \$1,200*** (If applicable for computer + internet)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>.

* Resident tuition is based on all program requirements (general education, core, directed electives). Any prerequisites required prior to the entry of the program will be listed separately.

** General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to train business assistants for a wide variety of duties. They may handle correspondence, maintain electronic and manual files, assist with financial record keeping, operate a variety of office equipment, assist customers, answer telephones, act as a receptionist, act as an accounts receivable or payable clerk, perform general office duties, and use personal computers for internet research, word processing, and financial analysis.

Students who complete this program will be able to:

PL0 1 - Perform on the job in ways that reflect professional ethics, legal standards, and organizational expectations

PL0 2 - Use accounting and financial information to make informed and timely planning and budgeting decisions to promote organizational goals

PL0 3 - Utilize current software technologies, including word processing, spreadsheets, and document management systems to input, organize, create, and present professional documents, workpapers, and presentations for both internal and external users

PL0 4 - Use research and analytical skills to gather and interpret data to support business decisions

Program Requirements

General Education

General Ed courses must be completed with a grade of C- or better, or Pass.

Writing (4 credits):

- WR 121_H / WR 121 - Academic Composition

Math (4 credits):

- MTH 065 - Elementary Algebra or higher

Program Core Courses

Program Core courses must be completed with a letter grade of C- or better. P/NP not accepted.

- BA 101 - Introduction to Business 4 Credit(s)
- BA 206 - Management Fundamentals 4 Credit(s)
- BA 214 - Business Communications 4 Credit(s)
- BA 278 - Leadership and Team Dynamics 4 Credit(s)
- BT 108 - Business Proofreading and Editing 4 Credit(s)
- BT 120 - MS WORD for Business 4 Credit(s)
- BT 123 - MS EXCEL for Business 4 Credit(s)
- BT 165 - Introduction to the Accounting Cycle 4 Credit(s)
- BT 206 - Co-op Ed: Business Seminar 2 Credit(s)
- BT 230 - Sustainable Paperless Practices 4 Credit(s)
- BT 270 - Project Management 4 Credit(s)

Computer Literacy (4 credits) - Complete one of the following:

- CS 120 - Concepts of Computing: Information Processing 4 Credit(s)
- CIS 101 - Computer Fundamentals 4 Credit(s)

Notes

- This program follows Certificate of Completion Requirements unless otherwise specified.
- Before enrolling in BT 120 - MS WORD for Business or BT 123 - MS EXCEL for Business, students are expected to have a basic knowledge of the Windows operating system and the ability to type 30 words per minute accurately and key 130-132 strokes per minute.

Construction Technology, 1-yr Certificate

Length: 46 credits

Program Contact

- Offered by: Advanced Technology
- Program Coordinator: Paul Rea, reap@lanecc.edu, 541-463-5504

- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu
- Cooperative Education: <https://www.lanecc.edu/programs-academics/internships-cooperative-education>

Estimated Cost: \$7,992

- Resident Tuition: \$6,095*
- Technology Fees: \$598
- General Student Fees: \$407**
- Online Course Fee: \$100 (if applicable)
- Books / Course Materials: \$567 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$225 (Course Fees and Materials)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives). Any prerequisites required prior to the entry of the program will be listed separately.

** General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to train students in the technical skills and knowledge of the construction industry. The graduate of this program can expect to work in the residential and commercial building construction field.

Students who complete this program will be able to:

PL0 1 - Cut, fit, and assemble wood and other materials for building construction

PL0 2 - Recognize and explain the importance of the relationships among building components in the process of assembling a structure

PL0 3 - Demonstrate and use industry safety standards

PL0 4 - Use blueprint reading skills necessary to the profession

PL0 5 - Establish field elevations and develop building layouts through the use of various surveying tools

PL0 6 - Acknowledge the various areas of the construction industry and explain how different occupations integrate into the field as a whole

Program Requirements

General Education

General Ed courses must be completed with a grade of C- or better, or Pass.

Writing (3-4 credits) - Complete one of the following:

- WR 115W - Introduction to College Writing: Workplace Emphasis
- WR 115 - Introduction to College Composition
- Any WR course higher than WR 115

Math (4-5 credits) - Complete one of the following:

- MTH 085 - Applied Geometry for Technicians MTH 097 - Geometry
- MTH 112 - Trigonometry

Human Relations (3-4 credits) - Complete one of the following:

- BA 278 - Leadership and Team Dynamics
- CG 100 - College Success
- CG 203 - Human Relations at Work
- COMM 130 - Business and Professional Communication
- COMM 218 - Interpersonal Communication
- COMM 219 - Small Group Communication
- COMM 260 - Introduction to Conflict Management 4 Credit(s)
- COMM 296 - Communication in Healthcare Settings 4 Credit(s)

Program Core Courses

Program Core must be completed with a grade of C- or better, or Pass. Students must complete 5 credits each of CST 118A, 118B & 118C, for a total of 15 credits

- CS 120 - Concepts of Computing: Information Processing 4 Credit(s)
- CST 110 - Blueprint Reading 1 3 Credit(s)

- CST 111 - Construction Orientation and Environment 2 Credit(s)
- CST 116 - Construction Estimating 4 Credit(s)
- CST 118A - Building Construction A 1 to 5 Credit(s)
- CST 118B - Building Construction B 1 to 5 Credit(s)
- CST 118C - Building Construction C 1 to 5 Credit(s)
- CST 119 - Building Construction Surveying 3 Credit(s)
- CST 122 - Construction Codes 2 Credit(s)
- CST 211 - Blueprint Reading 2 3 Credit(s)

Notes

- This program is fully contained in the Construction Technology, AAS degree.
- This program follows the Certificate of Completion Requirements unless otherwise specified.
- A high school diploma or equivalent is recommended for all applicants to this program.
- Cooperative Education (Co-op): In certain circumstances, co-op experience may be substituted for major coursework. For more information, please see an Academic Advisor or the Program Coordinator.

Construction Trades, General Apprenticeship, 1-yr Certificate

Length: Varies depending on trade area

Program Contacts

- Offered by Advanced Technology
- Program Coordinator: Joy Crump, crumpj@lanecc.edu, 541-463-5496
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Estimated Cost: \$10,364

- Resident Tuition: \$6,758*
- Technology Fees: \$663
- General Student Fees: \$1,627**
- Online Course Fee: \$80 (if applicable)
- Books / Course Materials: \$1,237 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>.

* Resident tuition is based on all program requirements (general education, core, directed electives). Any prerequisites required prior to the entry of the program will be listed separately.

** General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to provide a structured system of training in construction trades or occupations, leading to certification status. Students may earn a Certificate of Completion in Construction Trades, General Apprenticeship by successfully completing 36-45 core related training credits with a grade of C or better in all courses, and completing related instruction in communications, computation, and human relations.

Students who complete this program will be able to:

PLO 1 - Apply theory as it relates to trade competencies

PLO 2 - Perform the duties and responsibilities of the individual construction trade/occupation

Admission Information

Students must be registered apprentices with the State of Oregon Bureau of Labor and Industries. Information is available at boli.state.or.us.

Program Requirements

General Education

General Ed courses must be completed with a grade of C- or better, or Pass.

Writing (4 credits):

- WR 115 - Introduction to College Composition 4 Credit(s) or higher

Math (4 credits):

- MTH 060 - Beginning Algebra 4 Credit(s) or higher

Human Relations (3-4 credits) - Complete one of the following:

- BA 278 - Leadership and Team Dynamics 4 Credit(s)
- CG 100 - College Success 1-3 Credit(s)
- CG 203 - Human Relations at Work 1-3 Credit(s)
- COMM 130 - Business and Professional Communication 4 Credit(s)
- COMM 218 - Interpersonal Communication 4 Credit(s)
- COMM 219 - Small Group Communication 4 Credit(s)
- COMM 260 - Introduction to Conflict Management 4 Credit(s)
- COMM 296 - Communication in Healthcare Settings 4 Credit(s)

Program Core Courses

Complete all courses listed in one of the following trades. Program Core courses must be completed with a letter grade of C or better. P/NP is not accepted.

Carpenter (36 credits)

- APR 115 - Carpentry Skill Fundamentals 3 Credit(s)
- APR 116 - Carpentry Framing Fundamentals 3 Credit(s)
- APR 117 - Carpentry Framing and Introduction to Concrete 3 Credit(s)
- APR 118 - Carpentry Framing and Finishing 3 Credit(s)
- APR 119 - Carpentry Commercial Plans and Exterior Finish 3 Credit(s)
- APR 120 - Carpentry Interior Finish 3 Credit(s)
- APR 201 - Carpentry Basic Rigging and Practices 3 Credit(s)
- APR 202 - Carpentry Concrete Practices 3 Credit(s)
- APR 203 - Carpentry Forms and Tilt-up Panels 3 Credit(s)
- APR 204 - Carpentry Advanced Layout and Building Systems 3 Credit(s)
- APR 205 - Carpentry Advanced Planning and Management 3 Credit(s)
- APR 206 - Carpentry Equipment and Site Layout 3 Credit(s)

HVAC (44 credits)

- APR 101A - Trade Skills Fundamentals 4 Credit(s)
- APR 140 - Electrical Systems Installation Methods 4 Credit(s)
- APR 141 - Limited Voltage Electrical Circuits 4 Credit(s)
- APR 142 - Devices, Testing Equipment and Code 4 Credit(s)
- APR 143 - Limited Voltage Cabling 4 Credit(s)
- APR 144 - Communications 4 Credit(s)
- APR 190 - Electrical Theory 1 1-4 Credit(s) (take 4 credits of APR 190)
- APR 210 - HVAC Systems 1 4 Credit(s)
- APR 211 - HVAC Systems 2 4 Credit(s)
- APR 212 - HVAC Systems 3 4 Credit(s)
- APR 213 - HVAC Systems 4 4 Credit(s)

Plumber (40 credits)

- APR 160 - Plumbing Skill Fundamentals 4 Credit(s)
- APR 161 - Plumbing Materials and Fixtures 4 Credit(s)
- APR 162 - Plumbing Basic Waste Water Systems 2 Credit(s)
- APR 163 - Plumbing Calculations and Print Reading 4 Credit(s)
- APR 164 - Plumbing Basic Installation 1 4 Credit(s)
- APR 165 - Plumbing Basic Installation 2 2 Credit(s)
- APR 260 - Plumbing Water Supply Systems 4 Credit(s)
- APR 261 - Plumbing Piping Sizing and Systems 4 Credit(s)
- APR 262 - Plumbing Advanced Waste Systems 2 Credit(s)
- APR 263 - Plumbing Code and Test Preparation 2-4 Credit(s) (take 10 credits of APR 263)

Sheet Metal Worker (45 credits)

- APR 101A - Trade Skills Fundamentals 4 Credit(s)
- APR 170 - Introduction to Sheet Metal Apprenticeship 4 Credit(s)
- APR 171 - Sheet Metal Basic Layout 4 Credit(s)
- APR 173 - Sheet Metal Formulas 4 Credit(s)
- APR 270 - Architectural Sheet Metal 4 Credit(s)
- APR 271 - Sheet Metal Building Codes and Installation 4 Credit(s)
- APR 272 - Sheet Metal Duct Design 4 Credit(s)
- APR 273 - General Sheet Metal Fabrication 4 Credit(s)
- APR 274 - Sheet Metal Shop Fabrication 4 Credit(s)
- APR 275 - Sheet Metal Project Supervision 4 Credit(s)
- CST 110 - Blueprint Reading 1 3 Credit(s)
- **Wire Drive Welding (2 credits). Complete one course:**
 - APR 186 - Wire Drive Welding 1 1-4 Credit(s)
 - WLD 143 - Wire Drive Welding 1 1-4 Credit(s)

Notes

- This program follows Certificate of Completion Requirements unless otherwise specified.
- This program is contained in the Construction Trades, General Apprenticeship, AAS.

Licensing and Certification

An apprenticeship "Award of Completion" issued by the Oregon Bureau of Labor and Industries Apprenticeship and Training Division certifies that an individual has been trained in all aspects of an occupation and has met the requirements for program completion. This certificate is recognized throughout Oregon and industry-wide as a valid indicator of high quality, standardized training, and it provides on-the-job training documentation for community college credit. Licensing or Other Certification Exams: HVAC technician/installer and plumber trades require successful completion of trade-specific licensure examinations through the Oregon Building Codes Division.

Culinary and Baking, 1-yr Certificate

Length: 48 credits

Program Contacts

- Offered by the Culinary and Baking department
- Program Coordinator: Clive Wanstall, wanstallc@lanecc.edu, 541-462-3507
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu
- This program is connected to Career Pathways Coaching. Contact your coach at careerpathways@lanecc.edu

Estimated Cost: \$ 12,599

- Resident Tuition: \$ 6,360*
- Technology Fees: \$ 624
- General Student Fees \$ 407**
- Online Course Fee: \$ 70 (if applicable)
- Books / Course Materials: \$ 300 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$ 1950 (culinary course fees)
- Other Cost / Expenses: \$200*** (uniform & shoes)
- Differential Fees: \$ 2,688****

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>.

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

**** Any special info about computer needs or specifications.

Program Learning Outcomes

This program is for students who wish to develop and master both essential baking and cooking skills and gain entry into the foodservice industry as a beginning baking and pastry cook, or as a cook, prep cook or similar positions. It is also for those currently employed in the industry who wish to have greater knowledge and experience than what is provided in some industry settings.

Students who complete this program will be able to:

PLO 1 - Independently produce a wide range of baked goods employing current technologies and traditional baking methods

PLO 2 - Apply fundamental theory, culinary skills and techniques, and time management principles to prepare industry-standard food products

PLO 3 - Safely and effectively operate current standard commercial bakery and cooking equipment including cooktops, food processors, ovens (baking, convection, and conventional), dough mixers, and a variety of kitchen hand tools.

PLO 4 - Consistently employ sanitation concepts including high standards of personal hygiene, appropriate cleaning and sanitizing of equipment, and correct processing and storage of potentially hazardous foods according to the HACCP concept

Admission Information

- First qualified first admitted entry; There is a separate program application located at <https://www.lanecc.edu/programs-academics/areas-study/culinary-hospitality-and-tourism/culinary-arts/culinary-and-baking-program-application>
- Students should apply even if full, as students will be added to a waitlist, or we may add additional sections as needed.
- The program includes a one-week-long required onboarding course in the week of September 12. Students will be automatically enrolled for this free course once they have been formally admitted into the program.
- There are non-refundable program fees to cover tools and uniforms. There is a uniform fitting around four weeks prior to classes commencing.
- This program has a Late Summer/Fall start.
- Must obtain Oregon Health Authority Food Handlers Certification before being accepted into the program.
- Students pursuing the one-year certificate generally choose to initially concentrate in either Culinary or Baking.

Program Requirements

General Education

General Ed courses must be completed with a grade of C- or better, or Pass.

Writing (3-4 credits) - Complete one of the following:

- WR 115W - Introduction to College Writing: Workplace Emphasis 3 Credit(s)
- WR 115 - Introduction to College Composition 4 Credit(s)
- Any Writing course higher than WR 115

Math (3 credits) - Complete one of the following:

- MTH 025C - Basic Mathematics Applications 3 Credit(s) (Recommended)
- MTH 025 - Basic Mathematics Applications 3 Credit(s)
- Any Math higher than MTH 025

Human Relations (3-4 credits) - Complete one of the following:

- CG 100 - College Success 1-3 Credit(s)
- CG 203 - Human Relations at Work 1-3 Credit(s)
- BA 278 - Leadership and Team Dynamics 4 Credit(s)
- COMM 130 - Business and Professional Communication 4 Credit(s)
- COMM 218 - Interpersonal Communication 4 Credit(s)
- COMM 219 - Small Group Communication 4 Credit(s)
- COMM 260 - Introduction to Conflict Management 4 Credit(s)

Program Core Courses

Program Core must be completed with a grade of C- or better, or Pass.

- CA 121 - Composition of Cake 2 Credit(s)
- CA 122 - Artisan Breads 2 Credit(s)
- CA 123 - International Baking and Pastry 2 Credit(s)
- CA 124 - Seasonal Baking and Pastry 1 2 Credit(s)
- CA 125 - Seasonal Baking and Pastry 2 2 Credit(s)
- CA 160 - Introduction to Cooking Theories 1 7 Credit(s)
- CA 162 - Introduction to Cooking Theories 2 7 Credit(s)
- CA 163A - Beginning Baking and Pastry 3 Credit(s)
- CA 163B - Intermediate Baking and Pastry 2 Credit(s)
- CA 163C - Advanced Baking and Pastry 2 Credit(s)
- CA 294 - Advanced Cooking Theories 3 8 Credit(s)

Notes

- This program follows Certificate of Completion Requirements unless otherwise specified.
- Students interested in this program will also be enrolled in Career Coaching through the Career Pathways Department.

Certifications

Successful students will receive:

- National Restaurant Association ServSafe Food Protection Manager Certification - administered by Lane faculty
- Oregon Health Authority Food Handlers Certification - administered by the State of Oregon

Dental Assisting, 1-yr Certificate

Program Length: 49 credits

Program Prerequisites: 18-24 credits

Program Contacts

- Offered by Health Professions
- Program Coordinator: Leslie Greer, greerl@lanecc.edu, 541-463-5638
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Cooperative Education: <https://www.lanecc.edu/programs-academics/internships-cooperative-education>

Estimated Cost for Core Program: \$ 14,187

- Resident Tuition: \$6,493*
- Technology Fees: \$637
- General Student Fees: \$407**
- Online Course Fee: \$ (if applicable)
- Books / Course Materials: \$600 (Some courses use Open Educational Resources (OER), which are free or low-cost materials)
- Program Specific Fees: \$ 2,259 (certifications-licensure-exams, health insurance, application fee, background check, drug/alcohol screening, physical exams and immunizations)
- Other Cost / Expenses: \$2,271*** (instruments/tools, uniforms and shoes)
- Differential Fees: \$1,521****

Estimated Cost for Prerequisites: \$ 3,113

- Resident Tuition: \$2,518*
- Technology Fees: \$325
- General Student Fees: \$271**
- Online Course Fee: (if applicable)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>.

* Resident tuition is based on all program requirements (general education, core, directed electives). Any prerequisites required prior to the entry of the program will be listed separately.

** General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to prepare graduates for employment in the dental field with emphasis on current concepts and hands-on skills for clinical chairside assisting. Included classes also offer some cross-training and pathways to dental receptionist-bookkeeper.

Students who complete this program will be able to:

PLO 1 - Write/edit multiple types of professional communications

PLO 2 - Accurately expose, develop and mount diagnostic radiographs using multiple systems

PLO 3 - Compute mixing amounts and calculate formulas utilized in dental procedures

PLO 4 - Apply knowledge and skills required for business office procedures

PLO 5 - Access information via dental journals and web sites

PLO 6 - Identify classifications of anatomical structures and Systematically collect diagnostic data

PLO 7 - Maintain a professional working environment

PLO 8 - Provide an aseptic environment and prevent disease transmission

PLO 9 - Apply principles of ethical reasoning, decision making and professional responsibility

PLO 10 - Apply interpersonal communication and collaborative skills to effectively interact with diverse population groups, health care providers, dental professionals and community groups

PLO 11 - Perform or assist with a variety of clinical treatments used in all areas of dentistry

Admission Information

Contact the Health Professions Division or see <https://www.lanecc.edu/hp/dental-assisting>. Dental Assisting is a concentrated program that requires good reading and study skills. Dexterity for manipulation of small items and good eyesight are also required. Evidence of a physical examination (within the previous nine months), immunizations, eye exam, drug screen, and background check must be submitted prior to the start of the program. This program and profession include possible exposure to blood-borne pathogens and infectious diseases. Training is included to minimize risk to students and patients.

Program Requirements

Program Prerequisites

Program Prerequisites must be completed with a letter grade of C or better. P/NP not accepted.

Prerequisites for Admission

Writing (4 credits) - Complete one of the following:

A prior bachelor's degree (verified by a transcript from a US accredited institution) or higher, may be used to meet the Writing requirement.

- WR 115 - Introduction to College Composition
- WR 121 - Academic Composition (or WR 121_H)

Math (4 credits) - Complete the following:

- MTH 052 - Math for Health and Physical Sciences or higher

Human Relations (3-4 credits) - Complete one of the following:

- HP 110 - Health Office Procedures 3 Credit(s) (Recommended)
- BA 278 - Leadership and Team Dynamics 4 Credit(s)
- CG 203 - Human Relations at Work 1-3 Credit(s)
- COMM 130 - Business and Professional Communication 4 Credit(s)
- COMM 218 - Interpersonal Communication 4 Credit(s)
- COMM 219 - Small Group Communication 4 Credit(s)
- COMM 260 - Introduction to Conflict Management 4 Credit(s)
- COMM 296 - Communication in Healthcare Settings 4 Credit(s)

Computer Literacy (4 credits) - Complete one of the following:

- CS 120 - Concepts of Computing: Information Processing (Recommended)
- CIS 101 - Computer Fundamentals

Human Body Systems - Complete one of the following sequences:

- **1) Dental Health Sciences (3 credits) - Complete the following:**
 - DA 110 - Dental Health Sciences 3 Credit(s) (Recommended)
- **2) Human Body Systems (6 credits) - Complete both of the following:**
 - HP 150 - Human Body Systems 1 3 Credit(s)
 - HP 152 - Human Body Systems 2 3 Credit(s)
- **3) Anatomy and Physiology (8 credits) - Complete both of the following:**
 - BI 231 - Human Anatomy and Physiology 1 4 Credit(s)
 - BI 232 - Human Anatomy and Physiology 2 4 Credit(s)

Recommended Prerequisites

The following courses are recommended, but not required for program entry.

- HP 100 - Medical Terminology 1 3 Credit(s)
- HP 110 - Health Office Procedures 3 Credit(s) (Meets Human Relations requirement)
- EL 115 - Effective Learning 3 Credit(s)

Program Core Courses

Program Core courses must be completed with a letter grade of C or better. P/NP is not accepted.

- DA 102 - Advanced Clinical Experiences 3 Credit(s)
- DA 103 - Dentistry Law and Ethics 2 Credit(s)
- DA 105 - Infection Control 2 Credit(s)
- DA 115 - Dental Anatomy 3 Credit(s)
- DA 194 - Dental Office Procedures 3 Credit(s)

Dental Health Education (4 credits):

- DA 107 - Dental Health Education 1 1 Credit(s)
- DA 108 - Dental Health Education 2 3 Credit(s)

Dental Materials (6 credits):

- DA 192 - Dental Materials 3 Credit(s)
- DA 193 - Dental Materials 2 3 Credit(s)

Chairside Procedures (12 credits):

- DA 195 - Chairside Procedures 1 5 Credit(s)
- DA 196 - Chairside Procedures 2 7 Credit(s)

Dental Radiology (7 credits):

- DA 210 - Dental Radiology 1 4 Credit(s)
- DA 211 - Dental Radiology 2 3 Credit(s)

Cooperative Education

Cooperative Education and Seminar must be completed with a letter grade of C or better. P/NP is not accepted. Complete 7 credits total of Cooperative Education (6 credits) and Seminar (1 credit).

- DA 206 - Co-op Ed: Dental Assisting Seminar 1 Credit(s)
- DA 280 - Co-op Ed: Dental Assisting 6-12 Credit(s)

Notes

- This program follows Certificate of Completion Requirements unless otherwise specified.
- All DA courses must be passed with a class average of 75% or higher to remain in the program. (Courses with both a didactic and laboratory/clinical component must have a minimum grade of 75% in BOTH components to qualify as passing.)
- For DA courses, students must be accepted and enrolled in the Dental Assisting program: The employed dental assistant may be eligible to register for any DA course offered if space permits AND the working assistant meets state credentialing qualifications by contacting the Program Coordinator, Leslie Greer 541.463.5638

- Although prerequisite courses are not required to apply, their grades are used for application points and will make the application more competitive. Recommended pre-requisites can also accrue application points.
- WR 122 / WR 122_H / WR 123 may also be used to meet the Writing requirement. Contact an advisor or the program coordinator for more information.
- Cooperative Education (Co-op) is a required class for students enrolled in the Dental Assisting Program. Through Co-op, students spend approximately 24 hours a week during spring term working in a minimum of two different professional dental offices. Co-op field experience offers students the opportunity to gain skills, connect theory and practice, and make contacts for job openings. The required co-op seminar provides instruction on skills and documents needed to find employment.

Licensing and Certification

Upon graduation and successful completion of the board exams, students will qualify for the following: Certified Dental Assistant (CDA) - National credential; Expanded Function Dental Assistant (EFDA)- Oregon credential; Expanded Function Orthodontic Assistant (EFODA) - Oregon credential; Oregon Radiological Proficiency - Oregon X-ray license; additional certificates to place pit and fissure sealants (Oregon), place denture soft relines (Oregon), place gingival retraction cord (Oregon).

Accreditation

Accredited by the American Dental Association's Commission on Dental Accreditation, a specialized accrediting board recognized by the U.S. Dept. of Education. The Commission may be contacted at 800.621.8099 or 312.440.4653 or 211 East Chicago Avenue, Chicago, Illinois 60611. This accreditation allows for credentialing via Pathway I through the Dental Assisting National Board (DANB).

Drafting, 1-yr Certificate

Length: 45 credits

Program Contacts

- Offered by: Advanced Technology
- Program Coordinator: Margaret Robertson, robertsonm@lanecc.edu
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Estimated Cost: \$8,614

- Resident Tuition: \$5,963*
- Technology Fees: \$585
- General Student Fees: \$407** (if applicable)
- Online Course Fee: \$260
- Books / Course Materials: \$900 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Other Cost / Expenses 500 *** (Computer/Internet)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Hardware: In order to run AutoCAD, Revit, and SolidWorks software, students need a computer with Windows 10 or newer operating system; CPU of 3.3 GHz or higher; 8 GB of RAM, with 16 GB recommended; 30 GB free disk space for download and installation, plus 500 GB or more storage; graphics card capable of 24-bit color and DirectX 11 compliant, such as Nvidia Quadro series, AMD FirePro series, or AMD Radeon series; at least two USB ports; and an external mouse. (A

computer with Mac OS can run AutoCAD software, but not Revit or SolidWorks.) A limited number of laptops are available on loan from the LCC Student Helpdesk. In addition, students need a way to store backup copies of all files, such as a flash drive, external hard drive, or cloud service.

Connectivity: Students need a reliable internet connection; a browser such as Google Chrome or Firefox; and a robust antivirus and firewall product such as McAfee or Norton, kept up to date.

Software: Students need Microsoft Office, with Word, Excel, and PowerPoint, available free to LCC students. Students will need the current version of AutoCAD, Revit, and SolidWorks software and will get instructions in classes for downloading free educational versions.

Program Learning Outcomes

The purpose of this program is to train and prepare graduates from diverse backgrounds to work with and assist architects, engineers, other designers, and technicians as part of construction, manufacturing, or engineering teams.

Coursework prepares graduates to work collaboratively as design professionals across a range of capacities using a variety of software platforms. Students build skills in problem-solving, analysis, technical graphics, and basic design. Successful graduates are able to communicate effectively in multiple formats.

Students who complete this program will be able to:

PLO 1 - Effectively and independently use CAD and solid modeling software in alignment with industry standards

PLO 2 - Visualize three-dimensional objects from multiple viewing directions and translate three-dimensional objects into two-dimensional drawings

PLO 3 - Create mechanical and architectural drawings which follow recognized national standards for format, annotation, lines, and symbols

Program Requirements

General Education

General Ed courses must be completed with a grade of C- or better, or Pass.

Writing (4 credits) - Complete one of the following:

- WR 121 - Academic Composition 4 Credit(s)
- WR 121_H - Academic Composition-Honors

Algebra Requirement (4 credits) - Complete one of the following:

- MTH 075 - Applied Algebra for Technicians 4 Credit(s)
- MTH 095 - Intermediate Algebra 5 Credit(s)
- MTH 098 - Math Literacy 5 Credit(s)
- MTH 105 - Math in Society 4 Credit(s)
- MTH 106 - Math in Society 2 4 Credit(s)
- MTH 107 - Math in Society 3 4 Credit(s)
- MTH 111 - College Algebra 5 Credit(s)
- Any 200-level Math course

Geometry Requirement (4-5 credits) - Complete one of the following:

- MTH 085 - Applied Geometry for Technicians 4 Credit(s)
- MTH 097 - Geometry 4 Credit(s)
- MTH 112 - Trigonometry 5 Credit(s)

Human Relations Requirement (3-4 credits) - Complete one of the following:

- BA 278 - Leadership and Team Dynamics 4 Credit(s)
- CG 100 - College Success 1-3 Credit(s)
- CG 203 - Human Relations at Work 1-3 Credit(s)
- COMM 130 - Business and Professional Communication 4 Credit(s)
- COMM 218 - Interpersonal Communication 4 Credit(s)
- COMM 219 - Small Group Communication 4 Credit(s)
- COMM 260 - Introduction to Conflict Management 4 Credit(s)
- COMM 296 - Communication in Healthcare Settings 4 Credit(s)

Computer Literacy (4 credits):

- CS 120 - Concepts of Computing: Information Processing 4 Credit(s)
- or higher-level CS course

Program Core Courses

Program Core must be completed with a letter grade of C- or better, or Pass.

- CST 122 - Construction Codes 2 Credit(s)

- DRF 121 - Mechanical Drafting 4 Credit(s)
- DRF 137 - Architectural Plans 4 Credit(s)
- DRF 160 - Computer-Aided Drafting and Design 4 Credit(s)
- DRF 203 - Electrical Drafting 2 Credit(s)
- DRF 245 - Solid Modeling 4 Credit(s)

Cooperative Education Seminar (2 credits):

- Complete 2 credits of COOP 206 - Co-op Ed: Internship Seminar 1-2 Credit(s)

Program Electives

Program Electives must be completed with a grade of C- or better, or Pass. **Complete 4-6 credits** from the Advanced Technology Directed Elective List below.

Highly recommended for Drafting: ART 117, ART 216, CH 150, CIS 140W, CIS 195, CS 179, CST 116, CST 201, DS 154, DS 257, DS 259, GIS 151, GIS 245, MFG 101, MUL 101, MUL 212, PH 101, PH 102, PH 103, PH 201, PH 202, PH 203, WLD 143, WLD 151

Advanced Technology Directed Elective List

Some courses in the list below may already appear as requirements in some programs. In these instances, they cannot be taken twice nor counted in two areas. Please choose different electives. The courses that are program core courses are notated in the list as:

C = required in Construction

Dr = required in Drafting

Dt = required in Diesel Technology

- APR 101 - Trade Skills Fundamentals 4 Credit(s)
- APR 105 - Electrical Wiring for the Trades 4 Credit(s)
- APR 106 - Plumbing Trade Introduction 2 Credit(s)
- ART 117 - Basic Design: 3-Dimensional 3 Credit(s)
- ART 216 - Digital Design Tools 3 Credit(s)
- BA 101 - Introduction to Business 4 Credit(s)
- BT 165 - Introduction to the Accounting Cycle 4 Credit(s)
- CH 150 - Preparatory Chemistry 3 Credit(s)
- CIS 140W - Introduction to Operating Systems: Windows Clients 4 Credit(s)
- CIS 195 - Web Authoring 1 4 Credit(s)
- COOP 206 - Co-op Ed: Internship Seminar 1-2 Credit(s) ^{Dr}
- CS 120 - Concepts of Computing: Information Processing 4 Credit(s)
- CS 179 - Introduction to Computer Networks 4 Credit(s)
- CST 110 - Blueprint Reading 1 3 Credit(s) ^C
- CST 111 - Construction Orientation and Environment 2 Credit(s) ^C
- CST 116 - Construction Estimating 4 Credit(s) ^C
- CST 118 - Building Construction 1-5 Credit(s) ^C
- CST 119 - Building Construction Surveying 3 Credit(s) ^C
- CST 201 - Sustainable Building Practices 3 Credit(s)
- CST 211 - Blueprint Reading 2 3 Credit(s) ^C
- DRF 160 - Computer-Aided Drafting and Design 4 Credit(s)
- DRF 205 - Drafting: Structures 4 Credit(s) ^{C, Dr}
- DRF 207 - Drafting: Strength of Materials 4 Credit(s) ^{Dr}
- DRF 210 - Commercial Buildings 4 Credit(s) ^{Dr}
- DRF 220 - Building Information Modeling 4 Credit(s) ^{Dr}
- DS 154 - Heavy Duty Braking Systems 1-12 Credit(s) ^{Dt}
- DS 257 - Diesel Electrical Systems 1-12 Credit(s) ^{Dt}
- DS 259 - Diesel Engines and Engine Overhaul 1-12 Credit(s) ^{Dt}
- ET 129 - Electrical Theory 1 4 Credit(s)
- ET 130 - Electrical Theory 2 1-4 Credit(s)
- G 101 - Earth's Dynamic Interior 4 Credit(s) or G 102, G 103, G 146
- GIS 151 - Digital Earth 4 Credit(s)
- GIS 245 - GIS 1 4 Credit(s)
- HE 152 - Drugs, Society and Behavior 3 Credit(s)

- HE 252 - First Aid 3 Credit(s)
- MFG 101 - Safety and Basic Shop Practice 3 Credit(s) ^{Dt}
- MTH 060 - Beginning Algebra 4 Credit(s)
- MTH 075 - Applied Algebra for Technicians 4 Credit(s)
- MTH 085 - Applied Geometry for Technicians 4 Credit(s)
- MTH 095 - Intermediate Algebra 5 Credit(s)
- MUL 101 - Introduction to Media Arts 3 Credit(s)
- MUL 212 - Digital Imaging 4 Credit(s)
- NRG 121 - Air Conditioning System Analysis 3 Credit(s)
- NRG 124 - Energy Efficiency Methods 4 Credit(s)
- PH 101 - Fundamentals of Physics 4 Credit(s) or PH 102, PH 103, PH 201, PH 202, PH 203
- RTEC 105 - Introduction to Advanced Technology 3 Credit(s)
- SPAN 101 - Spanish, First-Year 5 Credit(s)
or SPAN 102, SPAN 103, SPAN 201, SPAN 202, SPAN 203
- WATR 101 - Introduction to Water Resources 3 Credit(s)
- WLD 111 - Blueprint Reading for Welders 3 Credit(s)
- WLD 121 - Shielded Metal Arc Welding 1 (stick welding) 1-4 Credit(s) ^{Dt}
- WLD 122 - Shielded Metal Arc Welding 2 (stick welding) 1-4 Credit(s) ^{Dt}
- WLD 139 - Welding Lab 1-3 Credit(s)
- WLD 140 - Welder Qualification (Cert): Wire Drive Processes 3 Credit(s)
- WLD 141 - Welder Qualification (Cert): SMAW 3 Credit(s)
- WLD 143 - Wire Drive Welding 1 1-4 Credit(s) ^{Dt}
- WLD 151 - Fundamentals of Metallurgy 1-3 Credit(s)
- CST 298 - Independent Study: Construction 1-12 Credit(s) (instructor approval only)
- DRF 298 - Independent Study: Drafting 1-12 Credit(s) (instructor approval only)

Notes

- This program is embedded in the Drafting, AAS degree.
- This program follows Certificate of Completion Requirements unless otherwise specified.

Early Childhood Education, 1-yr Certificate

Length: 45 credits

Program Contacts

- Offered by the Social Science Division
- Program Coordinator: Kathleen Lloyd, lloydk@lanecc.edu, 541-463-5287
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu
- Cooperative Education: Kathleen Lloyd, lloydk@lanecc.edu, 541-463-5287; <https://www.lanecc.edu/programs-academics/internships-cooperative-education>

Estimated Cost: \$8,924

- Resident Tuition: \$5,963*
- Technology Fees: \$585
- General Student Fees: \$407**
- Online Course Fee: \$450 (if applicable)
- Books / Course Materials: \$1,400 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$120 (MMR immunization if needed)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to prepare students for successful careers as early childhood professionals in a variety of settings such as private and public child care programs as well as in-home family childcare.

Students who complete this program should be able to:

- PLO 1 - Design and implement a Reggio-inspired curriculum approach for children to learn to make appropriate choices and actively participate in their own learning
- PLO 2 - Apply age-appropriate guidance strategies so children develop empathy, moral autonomy, self-worth and the ability to self-regulate in challenging situations
- PLO 3 - Use basic mathematics in everyday life and business transactions, including measurement, introduction of probability and statistics, reading graphs and tables, and signed numbers
- PLO 4 - Apply research and observational skills to deepen an understanding of human development

Program Requirements

General Education

General Ed courses must be completed with a grade of C- or better, or Pass.

Writing (4 credits) - Complete one of the following:

- WR 115 - Introduction to College Composition 4 Credit(s)
- or higher-level Writing course

Math (3 credits) - Complete one of the following:

- MTH 025 - Basic Mathematics Applications 3 Credit(s)
- or higher-level Math course

Human Relations (3-4 credits) - Complete one of the following:

- BA 278 - Leadership and Team Dynamics 4 Credit(s)
- CG 100 - College Success 1-3 Credit(s)
- CG 203 - Human Relations at Work 1-3 Credit(s)
- COMM 130 - Business and Professional Communication 4 Credit(s)
- COMM 218 - Interpersonal Communication 4 Credit(s)
- COMM 219 - Small Group Communication 4 Credit(s)
- COMM 260 - Introduction to Conflict Management 4 Credit(s)
- COMM 296 - Communication in Healthcare Settings 4 Credit(s)

Program Core Courses

Program Core courses must be completed with a grade of C- or better, or Pass.

- ECE 105 - Health and Safety Issues in Early Childhood Education 2 Credit(s)
- ECE 110 - Observing Young Children's Behavior 1 Credit(s)
- ECE 120 - Introduction to Early Childhood 2 Credit(s)
- ECE 130 - Guidance of Young Children 3 Credit(s)
- ECE 150 - Creative Activities for Children 3 Credit(s)
- ECE 160 - Exploring Early Childhood Curriculum 4 Credit(s)
- ECE 170 - Infants and Toddlers Development 4 Credit(s)
- FN 130 - Family Food and Nutrition 3 Credit(s)
- HDFS 226 - Child Development 3 Credit(s)

Multicultural / Diversity Requirement - Complete one of the following:

- ECE 253 - Diversity Issues in Early Childhood Education 3 Credit(s)
- ED 258 - Multicultural Education 3 Credit(s)

Inclusion / Special Needs Requirement - Complete one of the following:

- HDFS 228 - Young Children with Special Needs 3 Credit(s)
- ED 269 - Inclusion and Special Needs 3 Credit(s)

Supervised Teaching - Complete 4 credits of the following:

- ECE 240 - Supervised Student Teaching 4 Credit(s)

Notes

- This program follows Certificate of Completion Requirements unless otherwise specified.
- This program is fully contained in the Early Childhood Education, AAS degree.
- Immunization is required prior to enrolling in ECE 240 - Supervised Student Teaching. More information at lanecc.edu/socialscience/early-childhood-education.
- Some ECE and HDFS courses are offered through College Now at high schools in Lane County and outlying areas. For more information, see lanecc.edu/hsconnections/collegenow/courses-high-school
- Students seeking support with Reading / Writing / Math or English Language skills while transitioning to Early Childhood classes may apply to PASS Lane ECE. Contact Marcia Koenig (koenigm@lanecc.edu) 541-463-5818 Bldg 4/215.
- Students receiving SNAP food stamp benefits who are completing ECE Certificates may contact STEP at Lane program for coaching and access to financial resources.
- Prerequisites are not required for most ECE and HDFS courses.
- Transfer Credit for Prior Learning may be granted based on OCCD Oregon Registry Steps. See Program Coordinator for details.
- Students seeking a one-year certificate will complete 90 hours of student teaching (ECE 240). See the Program Coordinator for further information and to schedule your hours.

Credential

ECE students are encouraged to enroll in the Oregon Registry (<https://my.oregonregistryonline.org/>), a statewide professional recognition program that records and recognizes the growth and achievements of early childhood care and education professionals. Step 7 provides the Child Development Associate (CDA) Credential. College credit is also available for individuals at Step 7 or higher on the Oregon Registry, based on community training hours. Child Development Associate (CDA).

Electrician Apprenticeship Technologies, 1-yr Certificate

Length: Varies depending on trade area

Program Contacts

- Offered by Advanced Technology
- Program Coordinator: Joy Crump, crumpj@lanecc.edu, 541-463-5496
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Estimated Cost: \$9,261

- Resident Tuition: \$6,493*
- Technology Fees: \$637
- General Student Fees: \$442**
- Online Course Fee: \$460 (if applicable)
- Books / Course Materials: \$1,230 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives). Any prerequisites required prior to the entry of the program will be listed separately.

** General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

Students may earn a Certificate of Completion in Electrician Apprenticeship Technologies by successfully completing core related training credits, and completing related instruction in communications, computation, and human relations.

Students who complete this program will be able to:

PLO 1 - Apply theory to electrical wiring

PLO 2 - Repair and install electrical wire devices according to licensure regulations to meet National Electrical Code and Oregon Building Codes Division for Inside Electrician, Limited Energy Technician-License A, and/or Manufacturing Plant Electrician

Admission Information

Students must be registered apprentices with the State of Oregon Bureau of Labor and Industries and accepted by a Joint Apprenticeship Training Committee. In most cases, minimum qualifications to begin an apprenticeship include a minimum age of 18 years, a high school diploma or GED, and a minimum of a C grade for one year of high school algebra (or equivalent).

Program Requirements

General Education

General Ed courses must be completed with a grade of C- or better, or Pass.

Writing (4 credits):

- WR 115 - Introduction to College Composition 4 Credit(s) or higher

Math (4 credits):

- MTH 060 - Beginning Algebra 4 Credit(s) or higher

Human Relations (3-4 credits) - Complete one of the following:

- BA 278 - Leadership and Team Dynamics 4 Credit(s)
- CG 100 - College Success 1-3 Credit(s)
- CG 203 - Human Relations at Work 1-3 Credit(s)
- COMM 130 - Business and Professional Communication 4 Credit(s)
- COMM 218 - Interpersonal Communication 4 Credit(s)
- COMM 219 - Small Group Communication 4 Credit(s)
- COMM 260 - Introduction to Conflict Management 4 Credit(s)
- COMM 296 - Communication in Healthcare Settings 4 Credit(s)

Program Core Courses

Program Core courses must be completed with a letter grade of C or better. P/NP is not accepted. Complete all courses listed in one of the following trades:

Limited Energy Technician License A (38 credits)

- APR 101A - Trade Skills Fundamentals 4 Credit(s)
- APR 140 - Electrical Systems Installation Methods 4 Credit(s)
- APR 141 - Limited Voltage Electrical Circuits 4 Credit(s)
- APR 142 - Devices, Testing Equipment and Code 4 Credit(s)
- APR 143 - Limited Voltage Cabling 4 Credit(s)
- APR 144 - Communications 4 Credit(s)
- APR 220 - Electrical Apprenticeship Code and Exam Preparation 2-3 Credit(s) (Take 2 credits of APR 220)
- APR 240 - Audio and Intrusion Systems 4 Credit(s)
- APR 241 - Fire Alarm Systems and Nurse Call 4 Credit(s)
- APR 242 - Limited Voltage System Integration 4 Credit(s)

Manufacturing Plant Electrician (40-43 credits)

- APR 185 - Shielded Metal Arc Welding 1 1-4 Credit(s) (take 2 credits of APR 185)
- APR 189 - Shop Practices 2 Credit(s) OR MTH 065 - Elementary Algebra 4 Credit(s) or higher
- APR 190 - Electrical Theory 1 1-4 Credit(s) (take 4 credits of APR 190)
- APR 191 - Electrical Theory 2 1-4 Credit(s) (take 4 credits of APR 191)
- APR 220 - Electrical Apprenticeship Code and Exam Preparation 2-3 Credit(s) (take 8 credits of APR 220)

- APR 285 - Motors 1-4 Credit(s) (take 4 credits of APR 285)
- APR 286 - Motors 2 1-4 Credit(s) (take 4 credits of APR 286)
- APR 290 - Programmable Controllers 1 1-4 Credit(s) (take 4 credits of APR 290)
- APR 291 - Programmable Controllers 2 1-4 Credit(s) (take 4 credits of APR 291)
- APR 292 - Programmable Controllers 3 4 Credit(s)

Inside Wire Electrician (47 credits)

- APR 130 - Electrical Principles 5 Credit(s)
- APR 131 - Electrical Principles/Residential Wiring 5 Credit(s)
- APR 132 - Electrical Residential Wiring Lab 3 Credit(s)
- APR 133 - Electrical Generators, Transformers, and Motors 1 5 Credit(s)
- APR 134 - Electrical Generators, Transformers and Motors 2 5 Credit(s)
- APR 135 - Electrical, Generators, Transformers, and Motors Lab 3 Credit(s)
- APR 220 - Electrical Apprenticeship Code and Exam Preparation 2-3 Credit(s) (take 8 credits of APR 220)
- APR 225 - Electrical Motor Controls 5 Credit(s)
- APR 226 - Electrical Grounding/Bonding and Blueprint Reading 5 Credit(s)
- APR 227 - Electrical System Troubleshooting 3 Credit(s)

Notes

- This program follows Certificate of Completion Requirements unless otherwise specified.
- This program is embedded in the Electrician Apprenticeship Technologies, AAS.

Licensing and Certification

An apprenticeship "Award of Completion" issued by the Oregon Bureau of Labor and Industries Apprenticeship and Training Division certifies that an individual has been trained in all aspects of an occupation and has met the requirements for program completion. This certificate is recognized throughout Oregon and industry-wide as a valid indicator of high quality, standardized training, and it provides on-the-job training documentation for community college credit. Licensing or Other Certification: Electrician trades require successful completion of trade-specific licensure examinations through the Oregon Building Codes Division.

Fabrication/Welding Technology, 1-yr Certificate

Length: 46

Program Contacts

- Offered by: Advanced Technology
- Program Coordinator: Doug Ford, forddo@lanecc.edu, 541-463-5498
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Estimated Cost: \$9,444

- Resident Tuition: \$6,095*
- Technology Fees: \$598
- General Student Fees: \$407**
- Online Course Fee: (If applicable)
- Books / Course Materials: \$403 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$1,642 (Course fees)
- Other Cost / Expenses: \$300*** (Tools)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to prepare graduates for employment as Welders/Fabricators.

Students who complete this program will be able to:

- PLO 1 - Read and build metal products from simple blueprints
- PLO 2 - Use blueprints and other reference materials to calculate cost of materials necessary to the building of metal products
- PLO 3 - Apply mathematics necessary to fabricate metal products
- PLO 4 - Perform at entry-level typical industrial welding processes
- PLO 5 - Demonstrate at entry-level use of certain machine tools commonly found in industry
- PLO 6 - Demonstrate and use industry safety standards
- PLO 7 - Use appropriate library and information resources to research professional issues and support lifelong learning

Program Requirements

General Education

General Ed courses must be completed with a grade of C- or better, or Pass.

Writing (3-4 credits) - Complete one of the following:

- WR 115W - Introduction to College Writing: Workplace Emphasis
- WR 115 - Introduction to College Composition
- Any WR course higher than WR 115

Math (4-5 credits) - Complete one of the following:

- MTH 085 - Applied Geometry for Technicians
- MTH 097 - Geometry
- MTH 112 - Trigonometry

Human Relations (3-4 credits) - Complete one of the following:

- BA 278 - Leadership and Team Dynamics
- CG 100 - College Success
- CG 203 - Human Relations at Work
- COMM 130 - Business and Professional Communication
- COMM 218 - Interpersonal Communication
- COMM 219 - Small Group Communication
- COMM 260 - Introduction to Conflict Management 4 Credit(s)
- COMM 296 - Communication in Healthcare Settings 4 Credit(s)

Program Core Courses

Program Core courses must be completed with a letter grade of C- or better. P/NP is not accepted.

- WLD 112 - Fabrication/Welding 1 12 Credit(s)
- WLD 113 - Fabrication/Welding 2 12 Credit(s)
- WLD 114 - Fabrication/Welding 3 12 Credit(s)

Notes

- This program is fully contained in the Fabrication/Welding Technology, AAS degree.
- This program follows the Certificate of Completion Requirements unless otherwise specified.
- A high school diploma or equivalent is recommended for all applicants to this program.

Fitness and Lifestyle Specialist, 1-yr Certificate

Length: 45 credits

Program Contacts

- Offered by: Health and Physical Education
- Program Coordinator: Wendy Simmons, simmons@lanecc.edu, 541-463-5551
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu
- Cooperative Education: <https://www.lanecc.edu/programs-academics/internships-cooperative-education>

Estimated Cost: \$7,773

- Resident Tuition: \$5,963*
- Technology Fee: \$585
- General Student Fees: \$407**
- Online Course Fee: \$60 (if applicable)
- Books: \$669 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fee: \$30
- Other Costs / Expenses: \$60*** (Equipment)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>.

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to prepare students for various careers in the fitness industry, including personal training, group exercise instruction, coaching and wellness coaching.

Students who complete this program will be able to:

PLO 1 - Administer various basic fitness assessments including the measurement of cardiovascular endurance, body composition, flexibility, muscular strength and endurance in gym or health club settings

PLO 2 - Apply and interpret basic algebraic formulas to fitness assessment data and exercise programming

PLO 3 - Demonstrate interpersonal skills in the areas of leadership, motivation, and communication

PLO 4 - Design and demonstrate safe and effective exercise programs for apparently healthy individuals and groups within current fitness industry standards and best practices

PLO 5 - Respond to the needs of a diverse clientele and demonstrate inclusive practices

PLO 6 - Apply basic behavior modification strategies to enhance exercise and health behavior change with clients

PLO 7 - Apply basic exercise principles related to applied kinesiology, physiology, injury prevention, conditioning, resistance training, and functional training

PLO 8 - Apply nationally recognized standards for fitness and overall health and communicate the benefits and precautions associated with exercise

PLO 9 - Communicate their scope of practice and role within the health and fitness field and the allied health care system and practice appropriate and ethical professional conduct

Program Application

The program application must be completed prior to enrollment in PE 280F - Co-op Ed: Fitness. Apply at [lanecc.edu/hp/fitness-and-lifestyle-specialist](https://www.lanecc.edu/hp/fitness-and-lifestyle-specialist)

Program Requirements

General Education

General Ed courses must be completed with a grade of C- or better, or Pass.

Writing (4 credits) - Complete the following:

- WR 121 - Academic Composition or WR 121_H

Math (4 credits) - Complete one of the following:

- MTH 020 - Math Renewal
- or higher MTH course

Human Relations Requirement (3-4 credits) - Complete one of the following:

- BA 278 - Leadership and Team Dynamics 4 Credit(s)
- CG 100 - College Success 1-3 Credit(s)
- CG 203 - Human Relations at Work 1-3 Credit(s)
- COMM 130 - Business and Professional Communication 4 Credit(s)
- COMM 218 - Interpersonal Communication 4 Credit(s)
- COMM 219 - Small Group Communication 4 Credit(s)
- COMM 260 - Introduction to Conflict Management 4 Credit(s)
- COMM 296 - Communication in Healthcare Settings 4 Credit(s)
- EMS 102 - Crisis Intervention 3 Credit(s)
- HP 110 - Health Office Procedures 3 Credit(s)

Program Core Courses

FLS and PE 280F must be completed with a letter grade of C- or better. P/NP is not accepted. HE courses must be completed with a grade of C- or better, or Pass.

- FLS 110 - Coaching Healthy Eating 2 Credit(s)
- FLS 120 - Fitness Assessment & Exercise Prescription - Field Techniques 3 Credit(s)
- FLS 130 - Principles of Strength Training and Conditioning Instruction 2 Credit(s)
- FLS 140 - Applied Exercise Physiology 1 3 Credit(s)
- FLS 150 - Techniques of Group Exercise Leadership 2 Credit(s)
- FLS 160 - Applied Anatomy and Kinesiology 3 Credit(s)
- FLS 170 - Mental Dynamics of Exercise and Sport 3 Credit(s)
- FLS 185 - Career Preparation 3 Credit(s)
- FLS 190 - Injury Prevention and Management 3 Credit(s)

CPR (1-3 credits) - Complete one of the following:

- HE 161 - Cardiopulmonary Resuscitation 1 Credit(s)
- HE 252 - First Aid 3 Credit(s)
- Students with a current CPR Certification may substitute the CPR requirement. Contact Program Coordinator for details.

Career Advancement and Exploration (3-4 credits) - Complete one of the following:

- FLS 214 - Physical Exercise and Healthy Aging 3 Credit(s)
- FN 225 - Nutrition 4 Credit(s)
- HE 250 - Personal Health 3 Credit(s)
- HE 255 - Global Health and Sustainability 4 Credit(s)
- HE 275 - Lifetime Health and Fitness 3 Credit(s)
- ART 288 - Introduction to Web Design and Social Media 3 Credit(s)
- BA 101 - Introduction to Business 4 Credit(s)
- BA 223 - Marketing 4 Credit(s)
- BA 238 - Sales 3 Credit(s)
- BT 150 - Business Web Pages with WordPress 3 Credit(s)

Cooperative Education

Complete 4 credits of PE 280F - Co-op Ed: Fitness

Electives

ELECTIVES must be completed with a grade of C- or better, or Pass. Complete two different PE courses, selected from the following:

- PE 101 - Cardio Core Conditioning 1 Credit(s)
- PE 104 - Body Sculpt 1 Credit(s)
- PE 106 - Yogilates 1 Credit(s)

- PE 107 - Zumba Fitness 1 Credit(s)
- PE 108 - Conditioning 1 Credit(s)
- PE 111 - Group Cycling 1 Credit(s)
- PE 113 - Fitness Education: Introduction 1 Credit(s)
- PE 117 - Strength Training 1 Credit(s)
- PE 119 - Strength Training for Women 1 Credit(s)
- PE 134 - Tai Chi Chuan 1 Credit(s)
- PE 137 - Gentle Yoga 1 Credit(s)

Notes

- This is the parent program for the Fitness and Lifestyle Specialist: Group Exercise Instructor, CPC
- This program follows the Certificate of Completion Requirements unless otherwise specified.
- FLS 160 - Applied Anatomy and Kinesiology offered Winter Term. Students must pass FLS 160 to register for FLS 190 - Injury Prevention and Management.

Certifications

The FLS program is an ACE, American Council on Exercise, educational partner, such that the FLS curriculum aligns with ACE. Thus, students are better prepared to sit for the following certifications:

- ACE Health Coach
- Group Fitness Instructor
- Personal Trainer

Students can receive discounts on exams and study materials.

Health Information Management (online), 1-yr Certificate

Length: Program 45 credits

Program Prerequisites: 21 credits

Program Contacts

- Offered by Health Professions
- Academic Advising: <https://www.lanecce.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecce.edu
- Project Specialist: Kathy Torvik; torvikk@lanecce.edu
- Cooperative Education: <https://www.lanecce.edu/programs-academics/internships-cooperative-education>

Estimated Cost for Program: \$10,702

- Resident Tuition: \$5,963*
- Technology Fees: \$585
- General Student Fees: \$ 407**
- Online Course Fee: \$450 (if applicable)
- Books / Course Materials: \$1,649 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$149 (application fee, background check, drug/alcohol screening, American Data Bank-COMPLIO account)
- Other Cost / Expenses: \$1,500 *** (if applicable for computer/internet)

Estimated Cost for Prerequisites: \$3,537

- Resident Tuition: \$2,783*
- Technology Fees: \$273
- General Student Fees: \$271 **
- Online Course Fee: \$210 (if applicable)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecce.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives). Any prerequisites required prior to the entry of the program will be listed separately.

** General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program, which can be completed entirely online, is to prepare graduates for entry-level careers in medical records, health information management, and medical billing. Health Information Technicians organize and manage demographic, coded, and billing data by ensuring its quality, accuracy, accessibility, and security. They communicate with physicians and other healthcare professionals to clarify diagnoses or to obtain additional information as needed to meet billing, payment, and regulatory requirements. Health Record Technicians may assist with implementing and supporting electronic health records (EHR) software usability.

Student who complete this program will be able to:

PLO 1 - Demonstrate ability to organize, input, process, analyze, secure, and distribute healthcare information

PLO 2 - Demonstrate the organization, analysis, and evaluation of health record content for completeness and accuracy

PLO 3 - Demonstrate knowledge of abstracting health records and assigning standardized codes to diagnoses and procedures to accurately meet reporting needs and processing claims for insurance reimbursement

PLO 4 - Apply principles of healthcare privacy, confidentiality, legal, ethical issues and data security

PLO 5 - Demonstrate knowledge of healthcare terminology and medical conditions

PLO 6 - Demonstrate knowledge of healthcare delivery systems and regulatory environments

PLO 7 - Demonstrate knowledge of utilizing library and valid internet resources for research, projects, and to maintain a level of expertise in his or her field of study

PLO 8 - Apply critical and creative thinking, problem solving, and effective inter-professional communication skills related to health information management

Admission Information

Students are admitted three times per year (fall, winter, and spring terms).

Admission is restricted and is based on a program application. Please see the admissions and application information at <https://www.lanecce.edu/programs-academics/areas-study/health-medical-and-fitness/health-information-management/health-information-management>

Program Requirements

Prerequisites

Prerequisites must be completed with a letter grade of C or better. P/NP is not accepted.

The following courses must be completed prior to applying for the Health Information Management program.

Writing (4 credits) - Complete one of the following:

- WR 115 - Introduction to College Composition 4 Credit(s)
- WR 115W - Introduction to College Writing: Workplace Emphasis 3 Credit(s)
- Any WR course higher than WR 115

Mathematics (4 credits):

- MTH 052 - Math for Health and Physical Sciences 4 Credit(s) or higher

Medical Terminology (3 credits):

- HP 100 - Medical Terminology 1 3 Credit(s)

Computer Literacy (4 credits) - Complete one of the following:

- CIS 101 - Computer Fundamentals 4 Credit(s)
- CS 120 - Concepts of Computing: Information Processing 4 Credit(s)

Human Body Systems (6 credits) - Complete both of the following:

- HP 150 - Human Body Systems 1 3 Credit(s)
- HP 152 - Human Body Systems 2 3 Credit(s)

Program Core Courses

Program Core courses must be completed with a letter grade of C or better. P/NP is not accepted. HP 110 satisfies the Human Relations requirement.

- HIM 107 - Integrated Electronic Health Records 4 Credit(s)

- HIM 114 - Introduction to Medical Coding 4 Credit(s)
- HIM 120 - Introduction to Health Information Management 3 Credit(s)
- HIM 154 - Introduction to Disease Processes 4 Credit(s)
- HIM 160 - Healthcare Insurance and Billing 4 Credit(s)
- HIM 183 - Introduction to Health Information Systems 4 Credit(s)
- HIM 222 - Reimbursement Methodologies 4 Credit(s)
- HP 105 - EHR for the Provider Office 3 Credit(s)
- HP 110 - Health Office Procedures 3 Credit(s)
- HP 220 - Legal and Ethical Aspects of Healthcare 3 Credit(s)

Cooperative Education

Cooperative Education courses must be completed with a letter grade of C or better. P/NP is not accepted. HIM 280 may be used to meet the Cooperative Education requirement.

- **Seminar (2 credits):**
 - COOP 206 - Co-op Ed: Internship Seminar
- **Cooperative Education (3 credits):**
 - HIT 280 - Co-op Ed: Health Records

Program Electives

Electives courses must be completed with a letter grade of C or better. P/NP is not accepted.

Program Elective (4 credits):

- WR 121 - Academic Composition 4 Credit(s) or WR 121_H
- WR 227 - Technical Writing 4 Credit(s) or WR 227_H
- COMM 130 - Business and Professional Communication 4 Credit(s)
- COMM 218 - Interpersonal Communication 4 Credit(s)
- COMM 220 - Communication, Gender and Culture 4 Credit(s)

If using WR 121 to complete a program prerequisite, please complete an additional course from the list above.

Notes

- This is the parent program for the Health Information Management: Basic Health Care, CPC.
- This program follows the Certificate of Completion Requirements unless otherwise specified.
- Students can take all HIM program courses prior to admission except COOP 206, HIM 222, and HIT 280.
- All program prerequisites with the subject prefix CIS, CS, and HP must be completed no more than five years prior to HIM program acceptance. The prerequisites with CIS, CS, and HP prefixes can possibly be waived with current work experience in an HIM related field.
- All program prerequisites can be completed online.
- HIM 222 - Reimbursement Methodologies must be completed within five years of the start of the governing catalog.
- Students who have completed the Health Information Management: Medical Coding (online), CPC may use the HIM coding sequence (HIM 270, HIM 271, and HIM 273) plus one Computer Literacy course (CIS 101, or CS 120) to meet the HIM 114 - Introduction to Medical Coding requirement. See your Academic Advising team or Program Coordinator for more details about course substitutions and/or waivers.
- Completion of BI 231, BI 232, and BI 233 with a letter grade of C or better is an acceptable equivalent for HP 150 and HP 152.
- BT 120 - MS WORD for Business can be used to meet the Computer Literacy requirement if completed prior to Summer 2020 (when the program's prerequisites changed).
- Students who do not meet reading and/or math requirements may apply to PASS Lane Summer programming for alternative admission process. PASS Lane contact is Marcia Koenig (koenigm@lanecc.edu), Bldg. 11/244, 541-463-5818.
- Cooperative Education is required for students to earn their HIM Certificate(s) and /or AAS HIM degree. Students must complete a minimum of 3 credit hours of on-the-job work experience related to their educational and career goals. Work schedules and work sites vary.

Students are required to be admitted into the HIM Program, complete a minimum of two thirds of their program coursework and have their coop requirements met, and instructor approval prior to registering.

Industrial Mechanics and Maintenance Technology Apprenticeship, 1-yr Certificate

Length: 51 credits

Program Contacts

- Offered by Advanced Technology
- Program Coordinator: Joy Crump, crumpj@lanecc.edu, 541-463-5496
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Estimated Cost: \$10,373

- Resident Tuition: \$6,758*
- Technology Fees: \$663
- General Student Fees: \$1,085**
- Online Course Fee: \$40 (If applicable)
- Books / Course Materials: \$1,500 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$328.00 (Fabrication-Welding Program fee)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>.

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

Students may earn a Certificate of Completion in Industrial Mechanics and Maintenance Technology Apprenticeship by successfully completing core courses with a C grade or better in all courses, and completing related instruction in communications, computation, and human relations.

Students who complete this program will be able to:

- PLO 1 - Perform the duties and responsibilities of the millwright trade
- PLO 2 - Identify mechanical and/or electrical industrial systems

Admission Information

Admission to the millwright trade is usually conducted as an internal process with the employer. Information is available at the Oregon Bureau of Labor and Industries website: boli.state.or.us.

Program Requirements

General Education

General Ed courses must be completed with a grade of C- or better, or Pass.

Writing (4 credits):

- WR 115 - Introduction to College Composition 4 Credit(s) or higher

Math (4 credits):

- MTH 085 - Applied Geometry for Technicians

Human Relations (3-4 credits) - Complete one of the following:

- BA 278 - Leadership and Team Dynamics 4 Credit(s)
- CG 100 - College Success 1-3 Credit(s)
- CG 203 - Human Relations at Work 1-3 Credit(s)
- COMM 130 - Business and Professional Communication 4 Credit(s)
- COMM 218 - Interpersonal Communication 4 Credit(s)
- COMM 219 - Small Group Communication 4 Credit(s)
- COMM 260 - Introduction to Conflict Management 4 Credit(s)
- COMM 296 - Communication in Healthcare Settings 4 Credit(s)

Program Core Courses

Complete all courses listed in the following trade. Program Core courses must be completed with a letter grade of C or better. P/NP is not accepted.

Millwright (39 credits)

- APR 150 - The Millwright and Shop Safety 5 Credit(s)
- APR 151 - Millwright Machine Theory and Trade Calculations 5 Cr
- APR 152 - Millwright: Power Transmissions and Boilers-Steam 5 Cr
- APR 185 - Shielded Metal Arc Welding 1 1-4 Credit(s) (Complete 2 credits of APR 185)
- APR 186 - Wire Drive Welding 1 1-4 Credit(s) (Complete 2 credits of APR 186)
- APR 250 - Millwright: Industrial Print Reading, Schematics, and Estimating 5 Credit(s)
- APR 251 - Millwright: Pneumatics and Lubrications 5 Credit(s)
- APR 252 - Hydraulics for Millwrights 5 Credit(s)
- APR 253 - Millwright Piping Systems 5 Credit(s)

Notes

- This program follows Certificate of Completion Requirements unless otherwise specified.
- This program is fully contained in the Industrial Mechanics and Maintenance Technology Apprenticeship, AAS.

Licensing and Certification

An apprenticeship "Award of Completion" issued by the Oregon Bureau of Labor and Industries Apprenticeship and Training Division certifies that an individual has been trained in all aspects of an occupation and has met the requirements for program completion. This certificate is recognized throughout Oregon and industry-wide as a valid indicator of high quality, standardized training, and it provides on-the-job training documentation for community college credit. In addition, the Oregon community college Industrial Mechanics and Maintenance Technology Apprenticeship pathway provides statewide transfer opportunities, ladder certificates of completion, and an optional transfer path into Oregon Institute of Technology Bachelor of Science degree in Operations Management or Bachelor of Applied Science degree in Technology and Management. The Industrial Mechanics and Maintenance Technology Apprenticeship pathway includes an advising guide with a set of recommended courses that satisfy both the AAS and the Oregon Transfer Module (OTM). Students who complete the recommended set of OTM courses may apply for 45 credits of guaranteed block transfer to any other community college.

Medical Assistant, 1-yr Certificate

Length: Program 49 credits

Program Prerequisites: 19 credits

Program Contacts

- Offered by Health Professions Division
- Program Coordinator: Marty Pittman, pittmanm@lanecc.edu, 541-463-5617
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu
- Cooperative Education: <https://www.lanecc.edu/programs-academics/internships-cooperative-education>

Estimated Cost for Program: \$11,707

- Resident Tuition: \$6,493*
- Technology Fees: \$637
- General Student Fees: \$407**
- Online Course Fee: \$ (if applicable)
- Books / Course Materials: \$2,250 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)

- Program Specific Fees: \$1,374 (certifications/licensure/exams, health Insurance, immunizations, application fee, background check, drug/alcohol screening and ADB-Campio tracking account)
- Differential Fees: \$547****

Estimated Cost for Prerequisites: \$3,036

- Resident Tuition: \$2,518*
- Technology Fees: \$247
- General Student Fees: \$271**
- Online Course Fee: (if applicable)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives). Any prerequisites required prior to the entry of the program will be listed separately.

** General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to train the graduate for a successful career in the profession of medical assisting, and qualified to become a Certified Medical Assistant. The Certified Medical Assistant is a vital member of the ambulatory health care team.

Students who complete this program will be able to:

- PLO 1 - Prepare patients for examination or treatment; take temperatures, measure height and weight, and accurately record information in the patient chart
- PLO 2 - Physically assist patients onto and off of exam table
- PLO 3 - Sterilize instruments and stand by to assist as the practitioner examines or treats patients, or performs in-office surgeries
- PLO 4 - Give medical care to patients, under the practitioner's supervision, such as giving injections and drawing blood ; perform certain diagnostic testing in the laboratory
- PLO 5 - Treat the patient with respect, maintain confidentiality, and comply with healthcare laws and ethics
- PLO 6 - Perform administrative duties, which include managing an appointment schedule, organizing patients' medical records, bookkeeping procedures, and processing insurance claims
- PLO 7 - Use library resources for research and written assignments for a variety of purposes
- PLO 8 - Perform mathematic equations associated with medication dosages as well as basic mathematics to process medical insurance claims
- PLO 9 - Apply knowledge of anatomy and physiology, and medical terminology in a clinical setting

Admission Information

Students are encouraged to consult an academic advisor before applying for admission. The application and information on the point allocation system and transfer students is available in the Advising Department and on the Medical Assistant website, <https://www.lanecc.edu/programs-academics/areas-study/health-medical-and-fitness/medical-assistant/medical-assistant-application-information>. The program runs two cohorts a year: Fall & Spring.

Program Requirements

Program Prerequisites

Program Prerequisites must be completed with a letter grade of C or better. P/NP is not accepted. Prerequisites are required for program admission. To meet minimum application requirements, additional coursework may be needed. See Academic Advisors and application packet for information.

Writing (4 credits) - Complete one of the following:

- WR 115 - Introduction to College Composition 4 Credit(s)
- WR 115W - Introduction to College Writing: Workplace Emphasis 3 Credit(s)
- Any WR course higher than WR 115

Complete both of the following:

- MTH 052 - Math for Health and Physical Sciences 4 Credit(s)
- HP 100 - Medical Terminology 1 3 Credit(s)

Anatomy and Physiology (3-4 credits) - Complete one of the following:

- HP 150 - Human Body Systems 1 3 Credit(s)
- BI 231 - Human Anatomy and Physiology 1 4 Credit(s)

Psychology Requirement (3-4 credits)

- Complete one PSY course, 100-level or higher

Program Core Courses

Program Core courses must be completed with a letter grade of C or better. P/NP is not accepted. BT 165 may be completed with a C- or Pass. HP 110 satisfies the Human Relations requirement.

- BT 165 - Introduction to the Accounting Cycle 4 Credit(s)
- HP 110 - Health Office Procedures 3 Credit(s)
- HP 153 - Introduction to Pharmacology 3 Credit(s)
- HP 220 - Legal and Ethical Aspects of Healthcare 3 Credit(s)
- MA 112 - Medical Insurance Procedures 3 Credit(s)
- MA 119 - Introduction to Medical Coding and Scribing 3 Credit(s)
- MA 150 - Laboratory Orientation 3 Credit(s)

Anatomy and Physiology 2 (3-4 credits) - Complete one of the following:

Note: must either complete HP 150 & HP 152 or BI 231 & 232. Mixing sequences is not allowed.

- HP 152 - Human Body Systems 2 3 Credit(s)
- BI 232 - Human Anatomy and Physiology 2 4 Credit(s)

Clinical Assistant (9 credits) - Complete all of the following:

- MA 110 - Clinical Assistant 1 3 Credit(s)
- MA 120 - Clinical Assistant 2 3 Credit(s)
- MA 130 - Clinical Assistant 3 3 Credit(s)

Electronic Records (3-4 credits) - Complete one of the following:

- HP 105 - EHR for the Provider Office 3 Credit(s)
- HIM 107 - Integrated Electronic Health Records 4 Credit(s)

Computer Literacy (4 credits) - Complete one of the following:

- BT 120 - MS WORD for Business 4 Credit(s)
- CIS 101 - Computer Fundamentals 4 Credit(s)
- CS 120 - Concepts of Computing: Information Processing 4 Credit(s)

Cooperative Education

Cooperative Education courses must be completed with a grade of C or better. P/NP is not accepted.

- MA 206 - Co-op Ed: Medical Assistant Seminar 2 Credit(s)
- Complete 5 credits of MA 280 - Co-op Ed: Medical Assistant

Notes

- This program follows Certificate of Completion Requirements unless otherwise specified.
- The following requirements must meet universal standards order for internships: Physical examination; proof of required immunizations; tuberculosis (TB) screen; substance abuse screening (10-panel drug and alcohol screen); and criminal background check.
- MA 112 - Medical Insurance Procedures, MA 119 - Introduction to Medical Coding and Scribing and courses with the prefixes BT, CIS, CS, HIM, HP, PSY may be taken prior to program acceptance.
- Cooperative Education: During the required Co-op work experience in spring term, students rotate through local medical offices and clinics in both clinical and administrative settings. Students earn college credit and gain actual work experience. Students also receive instruction in the identification and proper use of other medical equipment and valuable on-the-job training. A required weekly seminar during Winter term includes resume writing instruction, interviewing techniques, and other job-search skills. Contact Marty Pittman, Medical Assistant Cooperative Education Coordinator, Bldg. 30, Rm. 210: pittmanm@lanecc.edu 541-463-3177.

Licensing and Certification

Certified Medical Assistant: CMA (AAMA). This is a National Certification.

Accreditation

Accreditation Medical Assistant, accredited by the Commission on Accreditation of Allied Health Education Programs, a specialized accrediting board recognized by the Council for Higher Education Accreditation, on recommendation of the Medical Assisting Education Review Board of the American Association of Medical Assistants Endowment. Commission on Accreditation of Allied Health Education Programs, 25400 US Highway 19 North, Suite 158, Clearwater, FL 33753; <https://caahep.org/>; 727-210-2350

Multimedia Design, 1-yr Certificate

Length: 46 credits

Program Contacts

- Offered by the Arts & Humanities Division
- Faculty Coordinator: Media Arts Department, artshumanities-office@lanecc.edu
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Estimated Cost: \$ 10,111

- Resident Tuition: \$ 6,095*
- Technology Fees: \$ 598
- General Student Fees: 813**
- Online Course Fee: \$ 110 (if applicable)
- Books / Course Materials: \$ 300 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$ 455 (Course Fees)
- Other Cost / Expenses: \$ 1,740*** (Computer/Internet, Adobe Software)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to prepare students for entry-level positions in the media industry and careers in multimedia design and production.

Students who complete this program will be able to:

- PLO 1 - Research, develop, and create effective content in a variety of digital media specialties
- PLO 2 - Demonstrate innovative use of concepts, techniques and tools in one or more media disciplines
- PLO 3 - Work productively, independently and as a team member, in the creation, pre-production, production, post-production, and distribution of multimedia projects from conception to final product
- PLO 4 - Demonstrate an understanding of the issues related to ethical and responsible media creation, including professional standards for copyright, fair use, and documentation
- PLO 5 - Research, evaluate, and use evolving media tools and technologies and sustain on-going technical and conceptual learning
- PLO 6 - Produce, organize, and present creative content to demonstrate the requisite knowledge, skills, and abilities for professional and/or educational advancement

Program Requirements

General Education

General Ed courses must be completed with a grade of C- or better, or Pass.

Writing (4 credits) - Complete the following:

- WR 121 - Academic Composition (or WR 121_H)

Math (4-5 credits) - Complete the following:

- MTH 098 - Math Literacy 5 Credit(s)
- MTH 060 - Beginning Algebra 4 Credit(s)
- Any Mathematics course higher than MTH 060

Human Relations (3-4 credits) - Complete one of the following:

- BA 278 - Leadership and Team Dynamics 4 Credit(s)
- CG 100 - College Success 1-3 Credit(s)
- CG 203 - Human Relations at Work 1-3 Credit(s)
- COMM 130 - Business and Professional Communication 4 Credit(s)
- COMM 218 - Interpersonal Communication 4 Credit(s)
- COMM 219 - Small Group Communication 4 Credit(s)
- COMM 260 - Introduction to Conflict Management 4 Credit(s)
- COMM 296 - Communication in Healthcare Settings 4 Credit(s)

Program Core Courses

Program Core courses must be completed with a grade of C- or better, or Pass.

- ART 115 - Basic Design: Fundamentals 3 Credit(s)
- ART 216 - Digital Design Tools 3 Credit(s)
- ART 245 - Drawing for Media 4 Credit(s)
- AUD 120 - Audio Production 4 Credit(s)
- FA 221 - Computer Animation 4 Credit(s)
- FA 250 - Concepts of Visual Literacy 3 Credit(s)
- MUL 101 - Introduction to Media Arts 3 Credit(s)
- MUL 103 - Time-Based Tools 4 Credit(s)
- MUL 105 - Digital Photography 4 Credit(s)
- VP 151 - Video Production 1: Camera 3 Credit(s)

Notes

- This program is fully contained in the Multimedia Design, AAS degree.
- This program follows the Certificate of Completion Requirements unless otherwise specified.

Practical Nursing, 1-yr Certificate

Program Length: 45 credits

Program Prerequisites: 23 credits

Program Contacts

- Offered by Health Professions
- Program Coordinator: Maggie Kruit, kruitm@lanecc.edu, 541-463-5753
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu
- Cooperative Education: <https://www.lanecc.edu/programs-academics/internships-cooperative-education>

Estimated Cost for Program: \$15,517

- Resident Tuition: \$5,963*
- Technology Fees: \$585
- General Student Fees: \$407**
- Online Course Fee: (if applicable)
- Books / Course Materials: \$500 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$2,636 (certifications-licensure-exams, health insurance, application fee, background check, drug/alcohol screening, CPR, Kaplan/DocuCare/ELNEC learning modules, and American Data Bank account)
- Other Cost / Expenses: \$1,335*** (nursing kit, uniforms/stethoscope/shoes, uniform laundry, ID badge and computer)

- Differential Fees: \$4,092****

Estimated Cost of Prerequisites: \$3,899

- Resident Tuition: \$3,180*
- Technology Fees: \$312
- General Student Fees: \$407**
- Online Course Fee: (if applicable)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives). Any prerequisites required prior to the entry of the program will be listed separately.

** General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to prepare the student for a certificate in Practical Nursing (PN), which meets the educational requirements for the national exam for PN licensure (NCLEX-PN).

Students who complete this program will be able to:

PLO 1 - Patient-centered Care: Incorporate novice level management skills while providing patient-centered care

PLO 2 - Quality and Safety: Execute nursing care that minimize risk or harm to patients, self, and others, and use data to monitor outcomes of patient-centered care

PLO 3 - Clinical Decision-Making: Formulate clinical judgments when providing nursing care based on current evidence, clinical expertise, and patient preferences, needs and values

PLO 4 - Professionalism: Execute nursing care that reflects integrity, accountability, and legal and ethical practice

PLO 5 - Informatics and Technology: Execute nursing care using current technology and patient information to maximize safety and optimize health

PLO 6 - Teamwork and Collaboration: Communicate effectively and collaboratively in a self-directed manner with patients, families and members of the healthcare team

Admission Information

For information about this program and the application packet, please see <https://www.lanecc.edu/programs-academics/areas-study/health-medical-and-fitness/licensed-practical-nurse>

Drug testing, criminal background check, and immunizations are required.

Program Requirements

Program Prerequisites

Program Prerequisites must be completed with a letter grade of C or better. P/NP is not accepted.

Prerequisites to Apply (8 credits)

The following courses are required prior to application submission. In order to be competitive in the selection process, you may need additional courses. Work with your Academic Advisor to select appropriate courses.

Math (4-5 credits)

- MTH 052 - Math for Health and Physical Sciences 4 Credit(s)
 - Any MTH course above MTH 052
- Note: MTH 095 or higher is required for RN program.

Anatomy & Physiology (4 credits)

- BI 231 - Human Anatomy and Physiology 1 4 Credit(s)

Prerequisites for Admission (15 credits)

The following courses are required prior to beginning the program.

- REQUIRED: Must be a current Certified Nursing Assistant (CNA)
- HP 100 - Medical Terminology 1 3 Credit(s)
- PSY 215 - Lifespan Developmental Psychology 4 Credit(s)

Anatomy & Physiology (8 credits)

- BI 232 - Human Anatomy and Physiology 2 4 Credit(s)
- BI 233 - Human Anatomy and Physiology 3 4 Credit(s)

Program Core Courses

Program Core courses must be completed with a letter grade of C or better. P/NP is not accepted (except for PN 101B, PN 102B, & PN 103B). PN 101A meets the Human Relations requirement and cannot be substituted. WR 121 is required to be completed prior to Fall Term of program entry. It is recommended that students also complete WR 122 by Fall Term of program entry.

Writing (8 credits) - Complete both of the following:

- WR 121 - Academic Composition 4 Credit(s) (or WR 121_H) AND
- WR 122 - Argument, Research and Multimodal Composition 4 Credit(s) (or WR 122_H)

Practical Nursing (37 credits)

- PN 101A - Practical Nursing 1 7 Credit(s)
- PN 101B - Practical Nursing 1 Lab 5 Credit(s)
- PN 102A - Practical Nursing 2 7 Credit(s)
- PN 102B - Practical Nursing 2 Lab 5 Credit(s)
- PN 103A - Practical Nursing 3 7 Credit(s)
- PN 103B - Practical Nursing 3 Lab 6 Credit(s)

Notes

- This program follows Certificate of Completion Requirements unless otherwise specified.
- The most recent BI 233 course must have been completed within 7 years prior to starting the PN Program.

Licensing and Certification

Nursing Approval: Oregon State Board of Nursing (OSBN) 27938 SW Upper Boones Ferry Rd, Portland, OR, 971.673.0685, <https://www.oregon.gov/OSBN/Pages/index.aspx>.

Licensing and Certification: Completion of this program gives a student a Certificate in Practical Nursing, which meets the educational requirements for the National Exam for PN licensure (NCLEX-PN).

Web Design, 1-yr Certificate

Length: 45 credits

- Offered by the Arts & Humanities Division
- Faculty Coordinator: Media Arts Department, artshumanities-office@lanec.edu
- Academic Advising: <https://www.lanec.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanec.edu
- Cooperative Education: <https://www.lanec.edu/programs-academics/internships-cooperative-education>

Estimated Cost: \$ 9,364

- Resident Tuition: \$ 5,963*
- Technology Fees: \$ 585
- General Student Fees: \$ 407**
- Online Course Fee: \$ 60 (if applicable)
- Books / Course Materials: \$ 300 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$ 310 (Course Fees)
- Other Cost / Expenses: \$ 1740*** (Computer/Internet, Adobe Software)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanec.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

This program is for students considering entry-level positions in web design and production, new media design, or positions with a focus on designing for the web, and online content.

Students who complete this program will be able to:

PLO 1 - Use appropriate library and information resources to research media topics and issues, concepts and tools, and support lifelong technical and aesthetic learning

PLO 2 - Create functional web pages using relevant front-end web development languages

PLO 3 - Describe the effects of media on society and demonstrate the ethical use of media

PLO 4 - Develop and apply effective visual design strategies for creating web sites, interactive multimedia, and computer-based training for delivery over the Internet and current distribution formats

PLO 5 - Select and employ web writing styles, infographics, imagery, video, sound, and motion graphics to communicate context-appropriate messages

Program Requirements

General Education

General Ed courses must be completed with a grade of C- or better, or Pass.

Writing (4 credits) - Complete the following:

- WR 121 - Academic Composition (or WR 121_H)

Math (4-5 credits) - Complete one of the following:

- MTH 098 - Math Literacy 5 Credit(s)
- MTH 060 - Beginning Algebra 4 Credit(s)
- Any Mathematics course higher than MTH 060

Human Relations (3-4 credits) - Complete one of the following:

- BA 278 - Leadership and Team Dynamics 4 Credit(s)
- CG 100 - College Success 1-3 Credit(s)
- CG 203 - Human Relations at Work 1-3 Credit(s)
- COMM 130 - Business and Professional Communication 4 Credit(s)
- COMM 218 - Interpersonal Communication 4 Credit(s)
- COMM 219 - Small Group Communication 4 Credit(s)
- COMM 260 - Introduction to Conflict Management 4 Credit(s)
- COMM 296 - Communication in Healthcare Settings 4 Credit(s)
-

Program Core Courses

Program Core courses must be completed with a grade of C- or better, or Pass.

- ART 115 - Basic Design: Fundamentals 3 Credit(s)
- ART 216 - Digital Design Tools 3 Credit(s)
- ART 245 - Drawing for Media 4 Credit(s)
- ART 289 - Web Production 3 Credit(s)
- ART 290 - Design Concepts for the Web 3 Credit(s)
- CIS 195 - Web Authoring 1 4 Credit(s)
- CS 133JS - Beg. Programming: JavaScript 4 Credit(s)
- MUL 212 - Digital Imaging 4 Credit(s)
- MUL 218 - Business Practices for Media Arts 3 Credit(s)

Cooperative Education

Cooperative Education must be completed with a letter grade of C- or better, or Pass. **Complete 3 credits of Cooperative Education.**

- MUL 280 - Co-op Ed: Web Design 3-12 Credit(s)

Notes

- This program follows Certificate of Completion Requirements unless otherwise specified.

- Students using lower-credit courses to meet General Education requirements may need to take additional credits to meet the 45-credit minimum.

Welding Processes, 1-yr Certificate

Length: 47 credits

Program Contacts

- Offered by: Advanced Technology
- Program Coordinator: Doug Ford, forddo@lanecc.edu, 541-463-5498
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Estimated Cost: \$10,171

- Resident Tuition: \$6,228*
- Technology Fees: \$611
- General Student Fees: \$542**
- Online Course Fee: (If applicable)
- Books / Course Materials: \$277 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$1,996 (Course fees)
- Other Cost / Expenses: \$385.00*** (Tools)
- Differential Fees: \$133 ****

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to prepare graduates for employment for entry-level and higher positions in metal fabrication industries. The graduate begins work in light or heavy metal fabrication as welders. Training and experience can lead to careers in technical sales, supervision, estimating, quality control, inspection, specialty welding, and teaching. The welding processes certificate program prepares graduates for employment as welder-trainees or welders.

Students who complete this program will be able to:

- PLO 1 - Read simple blueprints, interpret and apply industrial welding symbols
- PLO 2 - Demonstrate proficiency at an industry entry-level with Shielded Metal Arc Welding, various wire drive processes and Gas Tungsten Arc Welding
- PLO 3 - Weld and cut metal as is typical of circumstances found in industrial environments
- PLO 4 - Demonstrate and use industry safety standards

Program Requirements

General Education

General Ed courses must be completed with a grade of C- or better, or Pass.

Writing (3-4 credits) - Complete one of the following:

- WR 115W - Introduction to College Writing: Workplace Emphasis
- WR 115 - Introduction to College Composition
- Any WR course higher than WR 115

Math (4-5 credits) - Complete one of the following:

- MTH 085 - Applied Geometry for Technicians
- MTH 097 - Geometry
- MTH 112 - Trigonometry

Human Relations (3-4 credits) - Complete one of the following:

- BA 278 - Leadership and Team Dynamics
- CG 100 - College Success
- CG 203 - Human Relations at Work
- COMM 130 - Business and Professional Communication

- COMM 218 - Interpersonal Communication
- COMM 219 - Small Group Communication
- COMM 260 - Introduction to Conflict Management 4 Credit(s)
- COMM 296 - Communication in Healthcare Settings 4 Credit(s)

Program Core Courses

Program Core courses must be completed with a letter grade of C- or better. P/NP is not accepted. **Complete the maximum number of credits listed for all WLD courses.**

- WLD 111 - Blueprint Reading for Welders 3 Credit(s)
- WLD 121 - Shielded Metal Arc Welding 1 (stick welding) 1-4 Credit(s)
- WLD 122 - Shielded Metal Arc Welding 2 (stick welding) 1-4 Credit(s)
- WLD 143 - Wire Drive Welding 1 1-4 Credit(s)
- WLD 154 - Wire Drive Welding 2 1-4 Credit(s)
- WLD 159 - Wire Drive Welding 3 1-4 Credit(s)
- WLD 160 - Wire Drive Welding 4 1-4 Credit(s)
- WLD 242 - Gas Tungsten Arc Welding 1 3 Credit(s)
- WLD 256 - Gas Tungsten Arc Welding 2 3 Credit(s)
- WLD 257 - Gas Tungsten Arc Welding 3 3 Credit(s)

Program Electives

Program Electives - **complete 1-4 credits** from the Advanced Technology Directed Elective List below. WLD courses must be completed with a letter grade of C- or better. P/NP is not accepted. WLD 139 is only offered P/NP, and must be completed with a Pass grade. All other ELECTIVES must be completed with a grade of C- or better, or Pass.

Advanced Technology Directed Elective List

Some courses in the list below may already appear as requirements in some programs. In these instances, they cannot be taken twice nor counted in two areas. Please choose different electives. The courses that are program core courses are notated in the list as:

C = required in Construction

Dr = required in Drafting

Dt = required in Diesel Technology

- APR 101 - Trade Skills Fundamentals 4 Credit(s)
- APR 105 - Electrical Wiring for the Trades 4 Credit(s)
- APR 106 - Plumbing Trade Introduction 2 Credit(s)
- ART 117 - Basic Design: 3-Dimensional 3 Credit(s)
- ART 216 - Digital Design Tools 3 Credit(s)
- BA 101 - Introduction to Business 4 Credit(s)
- BT 165 - Introduction to the Accounting Cycle 4 Credit(s)
- CH 150 - Preparatory Chemistry 3 Credit(s)
- CIS 140W - Intro to Operating Systems: Windows Clients 4 Credit(s)
- CIS 195 - Web Authoring 1 4 Credit(s)
- COOP 206 - Co-op Ed: Internship Seminar 1-2 Credit(s) ^{Dr}
- CS 120 - Concepts of Computing: Information Processing 4 Credit(s)
- CS 179 - Introduction to Computer Networks 4 Credit(s)
- CST 110 - Blueprint Reading 1 3 Credit(s) ^C
- CST 111 - Construction Orientation and Environment 2 Credit(s) ^C
- CST 116 - Construction Estimating 4 Credit(s) ^C
- CST 118 - Building Construction 1-5 Credit(s) ^C
- CST 119 - Building Construction Surveying 3 Credit(s) ^C
- CST 201 - Sustainable Building Practices 3 Credit(s)
- CST 211 - Blueprint Reading 2 3 Credit(s) ^C
- DRF 160 - Computer-Aided Drafting and Design 4 Credit(s)
- DRF 205 - Drafting: Structures 4 Credit(s) ^{C,D Dr}
- DRF 207 - Drafting: Strength of Materials 4 Credit(s) ^{Dr}
- DRF 210 - Commercial Buildings 4 Credit(s) ^{Dr}
- DRF 220 - Building Information Modeling 4 Credit(s) ^{Dr}
- DS 154 - Heavy Duty Braking Systems 1-12 Credit(s) ^{Dt}
- DS 257 - Diesel Electrical Systems 1-12 Credit(s) ^{Dt}
- DS 259 - Diesel Engines and Engine Overhaul 1-12 Credit(s) ^{Dt}

- ET 129 - Electrical Theory 1 4 Credit(s)
- ET 130 - Electrical Theory 2 1-4 Credit(s)
- G 101 - Earth's Dynamic Interior 4 Credit(s) or G 102, G 103, G 146
- GIS 151 - Digital Earth 4 Credit(s)
- GIS 245 - GIS 1 4 Credit(s)
- HE 152 - Drugs, Society and Behavior 3 Credit(s)
- HE 252 - First Aid 3 Credit(s)
- MFG 101 - Safety and Basic Shop Practice 3 Credit(s) ^{Dt}
- MTH 060 - Beginning Algebra 4 Credit(s)
- MTH 075 - Applied Algebra for Technicians 4 Credit(s)
- MTH 085 - Applied Geometry for Technicians 4 Credit(s)
- MTH 095 - Intermediate Algebra 5 Credit(s)
- MUL 101 - Introduction to Media Arts 3 Credit(s)
- MUL 212 - Digital Imaging 4 Credit(s)
- NRG 121 - Air Conditioning System Analysis 3 Credit(s)
- NRG 124 - Energy Efficiency Methods 4 Credit(s)
- PH 101 - Fundamentals of Physics 4 Credit(s) or PH 102, PH 103, PH 201, PH 202, PH 203
- RTEC 105 - Introduction to Advanced Technology 3 Credit(s)
- SPAN 101 - Spanish, First-Year 5 Credit(s)
or SPAN 102, SPAN 103, SPAN 201, SPAN 202, SPAN 203
- WATR 101 - Introduction to Water Resources 3 Credit(s)
- WLD 111 - Blueprint Reading for Welders 3 Credit(s)
- WLD 121 - Shielded Metal Arc Welding 1 (stick welding) 1-4 Credit(s) ^{Dt}
- WLD 122 - Shielded Metal Arc Welding 2 (stick welding) 1-4 Cr ^{Dt}
- WLD 139 - Welding Lab 1-3 Credit(s)
- WLD 140 - Welder Qualification (Cert): Wire Drive Processes 3 Cr
- WLD 141 - Welder Qualification (Cert): SMAW 3 Credit(s)
- WLD 143 - Wire Drive Welding 1 1-4 Credit(s) ^{Dt}
- WLD 151 - Fundamentals of Metallurgy 1-3 Credit(s)
- CST 298 - Independent Study: Construction 1-12 Credit(s) (instructor approval only)
- DRF 298 - Independent Study: Drafting 1-12 Credit(s) (instructor approval only)

Notes

- This is the parent program for Welding Processes: Shielded Metal Arc Welder, CPC and Welding Processes: Wire Drive Welder, CPC.
- This program follows Certificate of Completion Requirements unless otherwise specified.
- A high school diploma or equivalent is recommended for all applicants to this program.

Short-Term Certificates

All certificate programs follow the Certificate of Completion Requirements unless otherwise specified. See individual certificates for specific program requirements.

Baking and Pastry, Certificate of Completion

Length: 17 credits

Program Contacts

- Offered by the Culinary and Baking department
- Program Coordinator: Clive Wanstall, wanstallc@lanecc.edu, 541-462-3507
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu
- This program is connected to Career Pathways Coaching. Contact your coach at careerpathways@lanecc.edu

Estimated Cost: \$ 5,029

- Resident Tuition: \$ 2,253*
- Technology Fees: \$ 221
- General Student Fees: \$ 407**

- Online Course Fee: (if applicable)
- Books / Course Materials: \$ 100 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$ 850 (culinary course fees)
- Other Cost / Expenses: \$ 200*** (uniform & shoes)
- Differential Fees: \$ 999****

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>.

* Resident tuition is based on all program requirements (general education, core, directed electives).

** General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

This program is for students who want to gain entry into the food service industry as beginning bakers and pastry cooks.

Students who complete this program will be able to:

PLO 1 - Independently produce a wide range of baked goods employing current technologies and traditional baking methods

PLO 2 - Safely and effectively operate current standard commercial bakery equipment including cook tops, food processors, ovens (baking, convection, and conventional), dough mixers, and a variety of kitchen hand tools

PLO 3 - Perform basic math functions, measure and scale ingredients and portions, and convert recipes to higher and lower yields

PLO 4 - Consistently employ sanitation concepts including high standards of personal hygiene, appropriate cleaning and sanitizing of equipment, and correct processing and storage of potentially hazardous foods according to the HACCP concept

Admission Information

- First qualified first admitted entry; There is a separate program application located at <https://www.lanecc.edu/programs-academics/areas-study/culinary-hospitality-and-tourism/culinary-arts/culinary-and-baking-program-application>
- Students should apply even if full, as students will be added to a waitlist, or we may add additional sections as needed.
- The program includes a one-week-long required onboarding course in the week of September 12. Students will be automatically enrolled for this free course once they have been formally admitted into the program.
- There are non-refundable program fees to cover tools and uniforms. There is a uniform fitting around four weeks prior to classes commencing.
- This program has a Late Summer/Fall start.
- Must obtain Oregon Health Authority Food Handlers Certification before being accepted into the program.
- Students pursuing the one-year certificate generally choose to initially concentrate in either Culinary or Baking.

Program Requirements

Program Core Courses

Program Core must be completed with a letter grade of C- or better, or Pass.

- CA 163A - Beginning Baking and Pastry 3 Credit(s)
- CA 163B - Intermediate Baking and Pastry 2 Credit(s)
- CA 163C - Advanced Baking and Pastry 2 Credit(s)
- CA 121 - Composition of Cake 2 Credit(s)
- CA 122 - Artisan Breads 2 Credit(s)
- CA 123 - International Baking and Pastry 2 Credit(s)
- CA 124 - Seasonal Baking and Pastry 1 2 Credit(s)
- CA 125 - Seasonal Baking and Pastry 2 2 Credit(s)

Notes

- This program follows Career Pathway Certificate of Completion Requirements unless otherwise specified.
- Students must complete college placement tests showing readiness for MTH 025 / MTH 025C or higher and WR 097 or higher to be accepted into the program. Students who do not meet reading and/or math requirements may apply to PASS Lane Summer programming for alternative admission process. PASS Lane contact is Marcia Koenig (koenigm@lanecc.edu) 541-463-5818, Bldg 11/244.

Educational Assistant, Certificate of Completion

Length: 28 credits

Program Contacts

- Offered by the Social Science Division
- Program Coordinator: Contact Social Science, 541-463-5427
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Estimated Cost: \$5,016

- Resident Tuition: \$3,710*
- Technology Fees: \$364
- General Student Fees: \$407** (if applicable)
- Online Course Fee: \$160
- Books / Course Materials: \$375 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers, or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to allow students beginning their coursework toward an Education degree to quickly become employed as an instructional aide in regional schools to allow them to earn income while enrolled in lower division community college courses. The certificate is designed to provide an introductory level of competitive skills needed to assist teachers in a multicultural and accessible classroom. The introduction to a multicultural and inclusive curriculum will enhance the Educational Assistants' ability to work with primary and secondary students of diverse backgrounds and needs.

Students who complete this program will be able to:

PLO 1 - Collaborate with the classroom instructor to create and adapt activities and lessons for individuals and small groups in a multilingual, special needs, diverse and inclusive classroom

PLO 2 - Apply social/emotional theories of healthy child development in order to sustain an emotionally safe classroom environment

PLO 3 - Differentiate the physical, cognitive and social/emotional developmental stages of middle childhood and adolescence

PLO 4 - Apply reading, writing, and mathematics skills to research and analysis

PLO 5 - Develop and express new perspectives through observation of and interaction with diverse individuals

PLO 6 - Define and explain the historical context and function of laws governing the education of students with diverse backgrounds and special needs

Program Requirements

General Education

General Ed courses must be completed with a grade of C- or better, or Pass.

Writing (4 credits) - Complete one of the following:

- WR 115 - Introduction to College Composition 4 Credit(s)

- or higher-level Writing course

Math (4 credits) - Complete one of the following:

- MTH 060 - Beginning Algebra 4 Credit(s)
- or higher-level Math course

Communication (4 credits) - Complete one of the following:

- COMM 111 - Fundamentals of Public Speaking 4 Credit(s)
- COMM 218 - Interpersonal Communication 4 Credit(s)

Program Core Courses

Program Core courses must be completed with a grade of C- or better, or Pass.

Intro to Education (3 credits) - Complete one of the following:

- ED 100 - Introduction to Education 3 Credit(s)
- ED 216 - Foundations of Education 3 Credit(s)

Child Development (3 credits) - Complete one of the following:

- ED 233 - Adolescent Learning and Development 3 Credit(s)
- HDFS 226 - Child Development 3 Credit(s)

Race and Ethnicity (4 credits) - Complete one of the following:

- ES 101 - Historical Racial and Ethnic Issues 4 Credit(s)
- SLD 111 - Chicano/Latino Leadership 1: Quien Soy? Quienes 4 Credit(s)

Diversity and Inclusion (6 credits) - Complete both of the following:

- ED 258 - Multicultural Education 3 Credit(s)
- ED 269 - Inclusion and Special Needs 3 Credit(s)

Notes

- This program follows Certificate of Completion Requirements unless otherwise specified.

Entry-Level Trades Worker, Certificate of Completion

Length: 17-21 credits

Program Contacts

- Offered by Advanced Technology
- Program Coordinator: Joy Crump, crumpj@lanecc.edu, 541-463-5496
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Estimated Cost: \$ 3,919

- Resident Tuition: \$ 2,783
- Technology Fees: \$ 273
- General Student Fees: \$ 270
- Online Course Fee: \$ 100
- Books / Course Materials: \$ 345 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$ 147

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>.

* Resident tuition is based on all program requirements (general education, core, directed electives). Any prerequisites required prior to the entry of the program will be listed separately.

** General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

This certificate is designed for those individuals pursuing apprenticeship and working towards courses that contribute to the application process. This program allows students to gain maximum points towards the apprenticeship process for some trades. Students get an introduction to the various apprenticeship programs available and gain basic skills to be successful candidates. It also provides a pathway for students interested in pursuing advanced technology programs of study and provides employability skills for entering the workforce.

Students who complete this program will be able to:

PLO 1 - Meet basic entry-level skills and earn points to apply for an apprenticeship program

PLO 2 - Gain exposure to the advanced technical classes offered at LCC to better identify a construction field of interest

PLO 3 - Earn industry-recognized credentials for employment in the construction fields, including NCCER, OSHA-10, and first aid/CPR certification

PLO 4 - Apply work-ready skills for the construction fields

Program Requirements

General Education

General Ed courses must be completed with a grade of C- or better, or Pass.

Health (3 credits)

- HE 252 - First Aid 3 Credit(s)

Human Relations (3-4 credits) - Complete one of the following:

- BA 278 - Leadership and Team Dynamics BA 278
- CG 100 - College Success CG 100
- CG 203 - Human Relations at Work CG 203 (**Recommended**)
- COMM 130 - Business and Professional Communication
- COMM 218 - Interpersonal Communication COMM 218
- COMM 219 - Small Group Communication COMM 219
- COMM 260 - Introduction to Conflict Management COMM 260
- COMM 296 - Communication in Healthcare Settings 4 Credit(s)

Program Core Courses

Program Core courses must be completed with a grade of C- or better, or Pass.

- APR 101 - Trade Skills Fundamentals 4 Credit(s)
- CST 110 - Blueprint Reading 1 3 Credit(s)

Choose two of the following:

- APR 105 - Electrical Wiring for the Trades 4 Credit(s)
- APR 106 - Plumbing Trade Introduction 2 Credit(s)
- CST 111 - Construction Orientation and Environment 2 Credit(s)
- CST 211 - Blueprint Reading 2 3 Credit(s)
- DRF 160 - Computer-Aided Drafting and Design 4 Credit(s)
- GWE 180 - Co-op Ed: General Work Experience 1-12 Credit(s) (3 credits required) or another 3 credit 280 co-op course
- MTH 075 - Applied Algebra for Technicians 4 Credit(s)
- MTH 085 - Applied Geometry for Technicians 4 Credit(s)
- MTH 095 - Intermediate Algebra 5 Credit(s)
- MTH 097 - Geometry 4 Credit(s)
- MTH 112 - Trigonometry 5 Credit(s)
- RTEC 105 - Introduction to Advanced Technology 3 Credit(s)
- WLD 121 - Shielded Metal Arc Welding 1 (stick welding) 1-4 Credit(s) (4 credits required)
- WLD 143 - Wire Drive Welding 1 1-4 Credit(s) (4 credits required)

Notes

- This program follows Certificate of Completion Requirements unless otherwise specified.
- In order to apply for an apprenticeship program, students need algebra which can be completed either in high school or college. Some AAS apprenticeship programs require higher math. Please consult with an academic advisor.

Licensing and Certification

- NCCER Embedded in the Trade Skills Fundamentals class. This certificate is an industry-standard credential. TSF class will administer, an online exam. NCCER will award the 10 credentials.
- OSHA 10 Embedded in the Trade Skills Fundamentals class. This certificate is an industry-standard credential. TSF class will administer the online curriculum and exam. OSHA will award the credential.
- First Aid/CPR/AED Is embedded in HE 252. Course will administer tests and award certificates.
- Flagler is an LCC course. Course will administer tests.

Geographic Information Science, Certificate of Completion

Length: 12 credits

Program Contacts

- Offered by the Social Science Division
- Program Coordinator: Lynn Songer, songerl@lanecc.edu, 541-463-5493
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Estimated Cost: \$2,342

- Resident Tuition: \$1590*
- Technology Fee: \$156
- General Student Fees: \$271**
- On Line Course Fee: \$120 (if applicable)
- Books/Course Materials: \$100 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)

Program-Specific Fees: \$105.00 (course fee)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/esfs/credit-tuition>.

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Note: Students must have a computer that runs a Windows 10 or newer operating system (PC or Mac with a dual boot). At minimum, the computer needs to have: CPU of 2.2 GHz; Hyper-threading (HHT) or Multi-core recommended, 8 GB ram. 6 GB disk space, and video graphics adapter with 64 MB RAM; 256 MB RAM or higher recommended. NVIDIA, ATI, and Intel chipsets supported.

Program Learning Outcomes

The purpose of this program is to provide students with the technical skills and geospatial content to employ geospatial information science (GIS) in support of their career and education goals in: science, business, resource management, public safety, and urban and regional planning. GIS 151, GIS 245, and GIS 246 transfer to many Oregon four-year colleges and support current graduates and working professionals as they update their technical skills. The GIS classes are required or directed elective in several degrees and transfer areas, such as: Computer Aided Design, Environmental Science, Programming, Criminal Justice, Unmanned Aerial Systems, General Science and Civil Engineering. This program is endorsed by the National GEO Tech Center of Excellence.

Students who complete this program will be able to:

PLO 1 - Collect and input data into a GIS system using: GPS, Digitizing, Geocoding

PLO 2 - Create, manage, and update spatial data

PLO 3 - Design and generate various cartographic products for planning or presentations

PLO 4 - Manage information in a GIS database

PLO 5 - Perform routine data analysis-buffer, query, union, intersect

Program Requirements

Recommended Prerequisites

Recommended Prerequisites must be completed with a letter grade of C- or better, or Pass.

- MTH 060 - Beginning Algebra 4 Credit(s) or higher
- CIS 101 - Computer Fundamentals 4 Credit(s)
-

Program Core Courses

GIS 151 and GIS 245 must be completed with a letter grade of C- or better. GIS 246 must be completed with a grade of B or better to earn this certificate. P/NP not accepted.

- GIS 151 - Digital Earth 4 Credit(s) offered Fall and Spring terms

- GIS 245 - GIS 1 4 Credit(s) offered Winter term
- GIS 246 - GIS 2 4 Credit(s) offered Spring term

Notes

- This program follows Certificate of Completion Requirements unless otherwise specified.
- Required software is designed to run on a PC with Windows operating system. For a MAC you will need to add a dual boot with Windows.

Limited Electrician Apprenticeship Technologies, Certificate of Completion

Length: Varies depending on trade area

Program Contacts

- Offered by Advanced Technology
- Program Coordinator: Joy Crump, crumpj@lanecc.edu, 541-463-5496
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Estimated Cost: \$4,771

- Resident Tuition: \$3,445*
- Technology Fees: \$338
- General Student Fees: \$35**
- Online Course Fee: \$260 (If applicable)
- Books / Course Materials: \$693.00 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>.

* Resident tuition is based on all program requirements (general education, core, directed electives). Any prerequisites required prior to the entry of the program will be listed separately.

** General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

Students may earn a Certificate of Completion in Limited Electrician Apprenticeship Technologies by successfully completing core related training credits.

Students who complete this program will be able to:

PLO 1 - Repair or install electrical wire devices according to limited licensure regulations to meet National Electrical Code and Oregon Building Codes Division for Limited Energy Technician-License B, and/or Limited Maintenance Electrician

Admission Information

Students must be registered apprentices with the State of Oregon Bureau of Labor and Industries and accepted by a Joint Apprenticeship Training Committee. In most cases, minimum qualifications to begin an apprenticeship include a minimum age of 18 years, a high school diploma or GED, and a minimum of a C grade for one year of high school algebra (or equivalent).

Program Requirements

Program Core Courses

Program Core courses must be completed with a letter grade of C or better. P/NP is not accepted. Complete all courses listed in one of the following trades.

Limited Energy Technician License B (26 credits)

- APR 101A - Trade Skills Fundamentals 4 Credit(s)
- APR 140 - Electrical Systems Installation Methods 4 Credit(s)
- APR 141 - Limited Voltage Electrical Circuits 4 Credit(s)
- APR 142 - Devices, Testing Equipment and Code 4 Credit(s)
- APR 143 - Limited Voltage Cabling 4 Credit(s)
- APR 144 - Communications 4 Credit(s)

- APR 220 - Electrical Apprenticeship Code and Exam Preparation 2-3 Credit(s) (take 2 credits of APR 220)

Limited Maintenance Electrician (20-23 credits)

- APR 189 - Shop Practices 2 Credit(s) OR MTH 065 - Elementary Algebra 4 Credit(s) or higher
- APR 220 - Electrical Apprenticeship Code and Exam Preparation 2-3 Credit(s) (take 2 credits of APR 220)
- APR 190 - Electrical Theory 1 1-4 Credit(s) (take 4 cr of APR 190)
- APR 191 - Electrical Theory 2 1-4 Credit(s) (take 4 cr of APR 191)
- APR 285 - Motors 1-4 Credit(s) (take 4 credits of APR285) OR APR 290 - Programmable Controllers 1 (take 4 credits)
- APR 286 - Motors 2 1-4 Credit(s) (take 4 credits of APR 286) OR APR 291 - Programmable Controllers 2 (take 4 credits)

Notes

- This program follows Certificate of Completion Requirements unless otherwise specified.
- This program is fully contained in the Electrician Apprenticeship Technologies, AAS.

Licensing and Certification

An apprenticeship "Award of Completion" issued by the Oregon Bureau of Labor and Industries Apprenticeship and Training Division certifies that an individual has been trained in all aspects of an occupation and has met the requirements for program completion. This certificate is recognized throughout Oregon and industry-wide as a valid indicator of high quality, standardized training, and it provides on-the-job training documentation for community college credit. Licensing or Other Certification: Electrician trades require successful completion of trade-specific licensure examinations through the Oregon Building Codes Division.

Occupational Skills Training, Certificate of Completion

Length: 36 credits

Program Contacts

- Offered by the Career Pathways office
- Program Coordinator: Rosa Lopez; lopezr@lanecc.edu; 541-463-4726
- Academic Advising: careerpathways@lanecc.edu
- Cooperative Education Coordinator: Shamra Clark; clarks@lanecc.edu; 541-463-5008

Estimated Cost: \$6,395

- Resident Tuition: \$4,770*
- Technology Fees: \$468
- General Student Fees: \$407**
- Books/Course Materials: \$750 (Some courses use Open Educational Resources (OER), which are free or low-cost materials)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

** General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to create an individualized career training opportunity focused on learning at a job site. This program offers students the ability to earn college credits while providing them the opportunity to design a career path that accommodates their occupational goals, abilities, skills and interests. The individual career plan must incorporate work site (hands-on) learning and may also include related classroom instruction as necessary to allow

the student to pursue a career path toward gainful employment. The OST Certificate is intended to serve as a beginning point for students to prepare for a job or to get a better job while opening the door to further education to expand their employment opportunities. Programs are to be developed based upon the assessed needs of individual students and are not to be pre-packaged programs of study.

Students who complete this program will be able to:

PLO 1 - Complete occupation-specific classes and work site education/training

PLO 2 - Formulate questions that can be addressed with data and collect, organize and display relevant data to answer them

PLO 3 - Gain knowledge and skills to prepare for employment in a chosen occupation

PLO 4 - Improve communication, human relations, and critical thinking and problem-solving abilities

PLO 5 - Interpret the concepts of a problem-solving task and translate them into mathematics

PLO 6 - Learn and enhance vocabulary and communication skills relevant to their individualized program and career plan

PLO 7 - Learn to research labor market trends and employment opportunities relevant to their career plan

PLO 8 - Improve awareness of individual communication and work style, and improve the ability to apply specific skills relevant to the students current Career Plan

Admission Information

Each student will need to fill out a Career Pathways application form and Student Plan for admissions into the Occupational Skills Program. Capacity is limited. For information, go to lanecc.edu/pathways. Each student's plan should include the following:

- Occupational Goal
- Labor Market Review
- Student Assessment
- Program of Study describing skills and knowledge needed to enter employment

Program Requirements

Program Core Courses

Core courses must be completed with a letter grade of C- or better. P/NP not accepted. Up to 12 credits of GWE 180 - Co-op Ed: General Work Experience may be substituted for the required OST 280 credits.

- Complete 20 credits of OST 280 - Co-op Ed: Occupational Skills
- Complete 16 credits of occupation-specific coursework

Notes

- This program follows the Certificate of Completion Requirements unless otherwise specified.
- Per state requirement, students in Occupational Skills programs must complete 20 credits of cooperative education, OST 280 Co-op Ed: Occupational Skills. This is an exception to the 18 credit cooperative education limit in other Lane programs.
- Ongoing career coaching is required as part of this program.
- Most training goals can be met, providing they meet the following criteria: 1) There is a current labor market need for the job being sought, and 2) there is an appropriate training site available in the community. The program is open-entry/open-exit (Students can start at any time in the term) to maximize educational opportunities.

Wildland Fire Management, Certificate of Completion

Length: 24 credits

Program Contacts

- Offered by the Science, Math, and Engineering Division
- Program Coordinator: Richard Glover, gloverr@lanecc.edu, 541-463-5514

- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Estimated Cost: \$4,064

- Resident Tuition: \$3,180*
- Technology Fees: \$312
- General Student Fees: \$407
- Online Course Fee: (if applicable)
- Books / Course Materials: \$75 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$90

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

** General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

This program prepares students for fire management positions with the Bureau of Land Management, the US Forest Service, private agencies, non-profit organizations, and local community groups. It emphasizes the use of fire as a management tool for restoration ecology as well as the role of fire in regional ecosystems. It integrates the study of forest ecological principles, fire science, fire policies, public communication, and management issues to prepare students for more advanced positions and further study in wildland fire management.

Students who complete this program will be able to:

PLO 1 - Explain current fire management issues and challenges using terminology and concepts related to wildland fire behavior, fire ecology, fire prevention, fire cessation and suppression, fire use, and fuels management

PLO 2 - Discuss the role of controlled burning/prescribed fire in maintaining and restoring fire-adapted ecosystems and habitats for fire-dependent species

PLO 3 - Participate in hands-on field exercises for planning, preparing, or implementing a prescribed fire

PLO 4 - Measure, inventory, and classify fuels using both quantitative and qualitative tools and methods

PLO 5 - Interpret and communicate spatial data using physical and digital mapping tools

Program Requirements

Program Core Courses

Program Core courses must be completed with a grade of C- or better, or Pass.

- FIRE 100 - Introduction to Wildland Fire 4 Credit(s)
- FIRE 200 - Wildland Fuels Management and Prescribed Burning 4 Credit(s)
- BI 103J - General Biology: Forest Ecology 4 Credit(s)
- GIS 151 - Digital Earth 4 Credit(s)

Program Core courses must be completed with a grade of Pass.

- FIRE 110 - Wildland Fire Management Seminar 1 Credit(s) (complete course 3 times)*
- FIRE 120 - NWCG Basic Firefighter Lecture Series 4 Credit(s) **
- FIRE 130 - NWCG Basic Firefighter Field Day 1 Credit(s) **

* FIRE 110 must be completed three (3) times for a total of 3 credits. Students who already have an Incident Qualification may complete FIRE 110 two (2) times.

** If you have an incident qualification card, you may qualify for Credit for Prior Learning (CPL) and will not need to take these classes as part of the Wildland Fire Management Certificate. Contact the Program Coordinator for help with CPL.

Notes

- This program follows Certificate of Completion Requirements unless otherwise specified.

- FIRE 120 and FIRE 130 will prepare students to successfully earn their NWCG card to gain the qualifications to work as a wildland firefighter. These exams are self-administered by students as part of their program.

Career Pathway Certificates of Completion (CPC)

All CPCs follow the Career Pathway Certificate of Completion Requirements unless otherwise specified. See individual certificates for specific program requirements.

Career Pathway Certificates of Completion (CPC) are between 12-44 credits and are fully embedded in an Associate of Applied Science degree or a Certificate of Completion. They acknowledge proficiency in specific technical skills and are a milestone toward completion of a more advanced program. CPCs help students qualify for entry-level jobs, enhance their current program, or advance in their current field of employment.

Certificate Requirements

- Unless otherwise specified by individual programs, complete all courses with a letter grade of C- or better, or Pass.
- Cumulative GPA must be at least 2.0 when the certificate is awarded.

Learning Outcomes

Lane degrees and certificates are aligned with Lane's Core Learning Outcomes and Oregon learning outcomes. View our State General Education Learning Outcomes. Certificates of completion have program-specific outcomes. See Programs (A-Z) for details.

Notes

- College-level courses are numbered 100 or higher. Courses numbered 001-099 are considered skills-based/developmental.
- Courses numbered 180, 197, 199, 280, 297, 298, or 299 count as electives, and do not meet General Education requirements. Courses numbered 199 and 299 are experimental, and may later be reviewed and approved in a certificate.
- Credit-by-Exam and Credit-by-Assessment may comprise up to 25% of total degree credits.
 - See the list of Course Types by Prefix. Policies on accepting career technical credits vary at four-year institutions in Oregon. Consult an academic advisor if considering transferring after earning an AAS.
- Students may use up to 18 credits of Cooperative Education toward a degree/certificate. Cooperative Education may be used as part of Program Core Courses, not as General Education.

Aviation Commercial Pilot, CPC

Length: 14 credits

Program Contacts

- Offered by Lane Aviation Academy
- Program Director: Joshua M. Rickert, Director Lane Aviation Academy, rickertj@lanecc.edu; 541-463-4319
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Estimated: \$35,642

- Resident Tuition: \$1,855*
- Technology Fees: \$182
- General Student Fees: \$371**
- Online Course Fee: \$100 (If applicable)
- Books / Course Materials: \$200 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$32,934 (Application Fee, Course Fees and Exams/Licensure)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

This program provides students with an FAA Commercial Pilot Certificate.

Students who complete this program will be able to:

PLO 1 - Conduct safe and legal flight operations in accordance with FAA regulations

PLO 2 - Use a variety of avionics and navigation aids for both Visual (VFR) and Instrument (IFR) flight operations

PLO 3 - Apply the Aeronautical Decision Making model (ADM) with particular attention to the human element and its integration with technology, addressing FAA guidelines on hazardous attitudes

PLO 4 - Identify, assess, and respond to hazards to flight operations including weather, mechanical, medical, physiological, and psychological issues, in order to make sound go/no-go and in-flight decisions in normal and emergency circumstances

PLO 5 - Explain the functions and interactions of aerodynamics, aircraft systems, navigation, communications, regulations, and meteorology

Admission Information

This is a limited-enrollment program. Please visit the Aviation Academy web page for more information and to apply. There is a \$75.00 application fee. <https://www.lanecc.edu/programs-academics/academic-departments/aviation-academy>

To align training with weather, the Aviation Professional Pilot program only accepts new students summer term. On a limited basis, some students may begin flying spring term, but no other courses will be offered until summer. Students with previous training should contact the academy, as other options may be available.

Program Requirements

Program Core Courses

Program Core courses must be completed with a grade of C- or better, or Pass.

- AP 210 - Flight Lab - Cross-Country 1 Credit(s)
- AP 212 - Commercial Pilot Ground School 5 Credit(s)
- AP 215 - Aircraft Systems & Structures 2 2 Credit(s)
- AP 220 - Flight Lab - Maneuvers 1 Credit(s)
- AP 221 - Simulator Lab - Commercial 1 Credit(s)
- AP 230 - Flight Lab - Commercial Pilot Certificate 1 Credit(s)
- AP 235 - Accident Investigations 3 Credit(s)

Notes

- This program follows Career Pathway Certificate of Completion Requirements unless otherwise specified.
- This program represents the minimum core elements for an FAA Commercial Pilot Certificate.
- This program is fully contained in the Aviation Professional Pilot, AAS. Students in the degree program will complete the commercial pilot certificate requirements during their second year.

Certifications

Commercial Pilot Certificate (Single-Engine Land)

AP 210, AP 220, AP 230, and AP 212 are required to take the FAA practical test, but full course completion is recommended. FAA Practical Test is administered by the FAA or an FFA Designated Pilot Examiner (DPE).

Aviation Instrument Rating, CPC

Length: 14 credits

Program Contacts

- Offered by Lane Aviation Academy
- Program Director: Joshua M. Rickert, Director Lane Aviation Academy, rickertj@lanecc.edu 541-463-4319
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Estimated Cost: \$ 20,787

- Resident Tuition: \$1,855*
- Technology Fees: \$182
- General Student Fees: \$279**
- Online Course Fee: \$50 (if applicable)
- Books / Course Materials: \$200 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$18,221 (Application Fee, Course Fees and Exams/Licensure)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives,) and includes any prerequisites required prior to the entry of the program.

** General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about computer needs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

This program provides students with an FAA Instrument Rating.

Students who complete this program will be able to:

PLO 1 - Conduct safe and legal flight operations in accordance with FAA regulations

PLO 2 - Use a variety of avionics and navigation aids for Instrument (IFR) flight operations

PLO 3 - Apply the Aeronautical Decision Making model (ADM) with particular attention to the human element and its integration with technology, addressing FAA guidelines on hazardous attitudes

PLO 4 - Identify, assess, and respond to hazards to flight operations including weather, mechanical, medical, physiological, and psychological issues, in order to make sound go/no-go and in-flight decisions in normal and emergency circumstances

PLO 5 - Explain the functions and interactions of aerodynamics, aircraft systems, navigation, communications, regulations, and meteorology

Admission Information

This is a limited-enrollment program. Please visit the Aviation Academy web page for more information and to apply. There is a \$75.00 application fee. <https://www.lanecc.edu/programs-academics/academic-departments/aviation-academy>

To align training with weather, the Aviation Professional Pilot program only accepts new students summer term. On a limited basis, some students may begin flying spring term, but no other courses will be offered until summer. Students with previous training should contact the academy, as other options may be available.

Program Requirements

Program Core Courses

Program Core courses must be completed with a grade of C- or better, or Pass.

- AP 130 - Flight lab - Attitude Control 1 Credit(s)
- AP 132 - Instrument Ground School 5 Credit(s)
- AP 135 - Advanced Avionics 1 Credit(s)
- AP 140 - Flight Lab - Instrument Rating 1 Credit(s)

- AP 141 - Simulator Lab - Instrument 1 Credit(s)
- GS 109 - Meteorology 5 Credit(s)

Notes

- This program follows Career Pathway Certificate of Completion Requirements unless otherwise specified.
- This program represents the minimum core elements for an FAA Instrument Rating add-on for a Private or Commercial Pilot Certificate.
- This program is fully contained in the Aviation Professional Pilot, AAS. Students in the degree program will complete the certificate requirements during Winter and Spring of their first year.

Certifications

Instrument Rating (Single-Engine Land)

AP 130, AP 140, and AP 132 are required to take the FAA practical test, but full course completion is recommended. FAA Practical Test is administered by the FAA or an FFA Designated Pilot Examiner (DPE).

Aviation Private Pilot, CPC

Length: 17 credits

Program Contacts

- Offered by Lane Aviation Academy
- Program Director: Joshua M. Rickert, Director Lane Aviation Academy, rickertj@lanecc.edu 541-463-4319
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Estimated Cost: \$19,387 (Track A)

This track includes students under 180 lbs, under 6'2", under 39" sitting height.

- Resident Tuition: \$2,253*
- Technology Fees: \$221
- General Student Fees: \$257**
- Online Course Fee: \$140 (if applicable)
- Books / Course Materials: \$1,000 *** (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$15,216 (Application Fee, Course Fees, and Exams/Licensure)
- Other Cost / Expenses: \$300.00*** (if applicable for Computer + internet)

Estimated Cost: \$20,585 (Track B)

This track includes students at or above 180 lbs, over 6'2", over 39" sitting height.

- Resident Tuition: \$2,253*
- Technology Fees: \$221
- General Student Fees: \$257**
- Online Course Fee: \$140 (if applicable)
- Books / Course Materials: \$1,000 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$16,414 (Application Fee, Course Fees, and Exams/Licensure)
- Other Cost / Expenses: \$ 300.00*** (if applicable for computer + Internet)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

This program provides students with an FAA Private Pilot Certificate.

Students who complete this program will be able to:

PLO 1 - Conduct safe and legal flight operations in accordance with FAA regulations

PLO 2 - Use a variety of avionics and navigation aids for Visual (VFR) flight operations

PLO 3 - Apply the Aeronautical Decision Making model (ADM) with particular attention to the human element and its integration with technology, addressing FAA guidelines on hazardous attitudes

PLO 4 - Identify, assess, and respond to hazards to flight operations including weather, mechanical, medical, physiological, and psychological issues, in order to make sound go/no-go and in-flight decisions in normal and emergency circumstances

PLO 5 - Explain the functions and interactions of aerodynamics, aircraft systems, navigation, communications, regulations, and meteorology

PLO 6 - Explore and critically appraise various aviation careers and businesses

Admission Information

This is a limited-enrollment program. Please visit the Aviation Academy web page for more information and to apply. There is a \$75.00 application fee. <https://www.lanec.edu/programs-academics/academic-departments/aviation-academy>

To align training with weather, the Aviation Professional Pilot program only accepts new students summer term. On a limited basis, some students may begin flying spring term, but no other courses will be offered until summer. Students with previous training should contact the academy, as other options may be available.

Program Requirements

Program Core Courses

Program Core courses must be completed with a grade of C- or better, or Pass.

Track A courses designed for students at or above 180 lbs, over 6'2", over 39" sitting height

Track B courses designed for students under 180 lbs, under 6'2", under 39" sitting height

- AP 110A - Flight Lab - Pre-Solo 1 Credit(s) or AP 110B
- AP 112 - Private Pilot Ground School 5 Credit(s)
- AP 113 - Airman Certification Standards and Maneuvers 1 Credit(s)
- AP 115 - Intro to Aviation and Careers 1 Credit(s)
- AP 120A - Flight Lab - Private Pilot Certificate 1 Credit(s) AP 120B
- AP 121 - Simulator Lab - Private 1 Credit(s)
- AP 125 - Aircraft Systems & Structures 1 2 Credit(s)
- AP 126 - Aviation Weather Services 2 Credit(s)
- AP 127 - Aerodynamics 3 Credit(s)

Notes

- This program follows Career Pathway Certificate of Completion Requirements unless otherwise specified.
- This program represents the minimum core elements for a Private Pilot Certificate.
- This program is fully contained in the Aviation Professional Pilot, AAS. Students in the degree program will complete these certificate requirements in their first two terms.

Certifications

Private Pilot Certificate (Single-Engine Land)

(AP 110A or AP 110B) and (AP 120A or AP 120B) and AP 112 are required to take the FAA practical test, but full course completion is recommended. FAA Practical Test is administered by the FAA or an FFA Designated Pilot Examiner (DPE).

Aviation Unmanned Aircraft Systems: Aerial Photography, CPC

Length: 12 credits

Program Contacts

- Offered by Lane Aviation Academy
- Program Coordinator: Solomon Singer, singers@lanec.edu
- Academic Advising: <https://www.lanec.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanec.edu

Estimated Cost: \$ 3,527

- Resident Tuition: \$1,590
- Technology Fees: \$156
- General Student Fees: \$301
- Online Course Fee: (if applicable)
- Books / Course Materials: \$400
- Program Specific Fees: \$1,080

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanec.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

This Aerial Photography CPC provides a stackable certificate that demonstrates proficiency in aerial photography, videography, and UAS operation proficiency.

Students who complete this program will be able to:

PLO 1 - Integrate unmanned flights into the NAS safely and effectively

PLO 2 - Safely and effectively plan and execute field missions in a variety of situations utilizing current unmanned aircraft systems

PLO 3 - Work safely and effectively within a crew/team environment utilizing current unmanned technology

PLO 4 - Successfully obtain and utilize Federal Aviation Administration waivers

PLO 5 - Apply the principles of photography, videography, and mission-specific specialized flight maneuvers in unmanned operations

PLO 6 - Effectively apply and utilize Crew Resource Management (CRM) and Aeronautical Decision-Making (ADM) strategies to ensure safe and effective UAS operations and procedures

PLO 7 - Utilize effective and industry-standard documentation procedures for UAS flight operations and maintenance activities

Admission Information

There will be a separate program application submitted by the student to the Program Director, and approval is required to be enrolled in the Associates of Applied Science (A.A.S) in Aviation Unmanned Aircraft Systems. More information can be found here: <https://www.lanec.edu/programs-academics/academic-departments/aviation-academy>

Program Requirements

Program Core Courses

Program Core courses must be completed with a grade of C- or better, or Pass.

- MUL 105 - Digital Photography 4 Credit(s)
- MUL 215 - Digital Photography 2 3 Credit(s)
- UAS 124A - Intro Flight Lab 1 Credit(s)
- UAS 124B - Advanced Operations Flight Lab 1 Credit(s)
- UAS 124D - UAS Field Operations 1 Credit(s)
- UAS 124F - Professional Development 2 Credit(s)

Notes

- This program follows Career Pathway Certificate of Completion Requirements unless otherwise specified.
- This program is fully contained in the Aviation Unmanned Aircraft Systems, AAS.

Aviation Unmanned Aircraft Systems: Autopilot, CPC

Length: 12 credits

Program Contacts

- Offered by Lane Aviation Academy
- Program Coordinator: Solomon Singer, singers@lanecc.edu
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Estimated Cost: \$4,403

- Resident Tuition: \$1,590
- Technology Fees: \$156
- General Student Fees: \$437
- Online Course Fee: \$120 (if applicable)
- Books / Course Materials: \$300
- Program Specific Fees: \$1,808

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

This autopilot CPC provides a stackable certificate that demonstrates proficiency in several industry-standard autopilots and related software.

Students who complete this program will be able to:

- PLO 1 - Integrate unmanned flights into the NAS safely and effectively
- PLO 2 - Safely and effectively plan and execute field missions in a variety of situations utilizing current unmanned aircraft systems
- PLO 3 - Work safely and effectively within a crew/team environment utilizing current unmanned technology
- PLO 4 - Safely pilot multi-copters, fixed wings, and other aircraft types in normal and simulated emergency flight operations
- PLO 5 - Effectively apply and utilize Crew Resource Management (CRM) and Aeronautical Decision-Making (ADM) strategies to ensure safe and effective UAS operations and procedures
- PLO 6 - Utilize effective and industry-standard documentation procedures for UAS flight operations and maintenance activities

Admission Information

There will be a separate program application submitted by the student to the Program Director, and approval is required to be enrolled in the Associates of Applied Science (A.A.S) in Aviation Unmanned Aircraft Systems. More information can be found here: <https://www.lanecc.edu/programs-academics/academic-departments/aviation-academy>

Program Requirements

Program Core Courses

Program Core courses must be completed with a grade of C- or better, or Pass.

- UAS 121 - Multirotor Systems 3 Credit(s)
- UAS 122 - Ground Control Radio Systems 2 Credit(s)
- UAS 211 - UAS Autopilot Ardupilot and Piccolo 3 Credit(s)
- UAS 214 - UAS Avionics and Electrical Systems 4 Credit(s)

Notes

- This program follows Career Pathway Certificate of Completion Requirements unless otherwise specified.

- This program is fully contained in the Aviation Unmanned Aircraft Systems, AAS .

Certifications

FCC Amateur Technician Radio License obtained after UAS 122

Aviation Unmanned Aircraft Systems: Commercial UAS Operator, CPC

Length: 31 credits

Program Contacts

- Offered by Lane Aviation Academy
- Program Coordinator: Solomon Singer, singers@lanecc.edu
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Estimated: \$ 9,072

- Resident Tuition: \$ 4,108
- Technology Fees: \$ 403
- General Student Fees: \$ 437
- Online Course Fee: \$ 200
- Books / Course Materials: \$ 300
- Program Specific Fees: \$ 3625

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, at one of the outreach centers, or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

This Commercial UAS Operator CPC provides a stackable certificate that demonstrates proficiency in operations, flight procedures, equipment familiarity, and industry-standard operator and Unmanned Pilot training.

Students who complete this program will be able to:

- PLO 1 - Integrate unmanned flights into the NAS safely and effectively
- PLO 2 - Safely and effectively plan and execute field missions in a variety of situations utilizing current unmanned aircraft systems
- PLO 3 - Design, assemble, build, program, maintain and fly hobby and aviation-grade unmanned equipment and systems
- PLO 4 - Work safely and effectively within a crew/team environment utilizing current unmanned technology
- PLO 5 - Safely pilot multi-copters, fixed wings, and other aircraft types in normal and simulated emergency flight operations
- PLO 6 - Successfully obtain and utilize Federal Aviation Administration waivers
- PLO 7 - Apply the principles of photography, videography, and mission-specific specialized flight maneuvers in unmanned operations
- PLO 8 - Utilize spatial data and GIS technology to make or inform appropriate decisions and create deliverable geospatial products
- PLO 9 - Effectively apply and utilize Crew Resource Management (CRM) and Aeronautical Decision-Making (ADM) strategies to ensure safe and effective UAS operations and procedures
- PLO 10 - Utilize effective and industry-standard documentation procedures for UAS flight operations and maintenance activities

Admission Information

There will be a separate program application submitted by the student to the Program Director, and approval is required to be enrolled in the Associates of Applied Science (A.A.S) in Aviation Unmanned Aircraft Systems. More information can be found here: <https://www.lanecc.edu/programs-academics/academic-departments/aviation-academy>

Program Requirements

Program Core Courses

Program Core courses must be completed with a grade of C- or better, or Pass.

- UAS 101 - Intro to UAS and Careers 1 Credit(s)
- UAS 121 - Multirotor Systems 3 Credit(s)
- UAS 122 - Ground Control Radio Systems 2 Credit(s)
- UAS 123 - UAS Part 107 License Lab 1 Credit(s)
- UAS 124A - Intro Flight Lab 1 Credit(s)
- UAS 124B - Advanced Operations Flight Lab 1 Credit(s)
- UAS 124C - Fixed Wing Lab 1 Credit(s)
- UAS 124D - UAS Field Operations 1 Credit(s)
- UAS 124E - Advanced Sensor Lab 1 Credit(s)
- UAS 201 - UAS Ground School 5 Credit(s)
- UAS 211 - UAS Autopilot Ardupilot and Piccolo 3 Credit(s)
- UAS 230 - UAS Data Acquisition and Analysis 3 Credit(s)
- UAS 231 - Advanced Sensor 3 Credit(s)
- GS 109 - Meteorology 5 Credit(s)

Notes

- This program follows Career Pathway Certificate of Completion Requirements unless otherwise specified.
- This program is fully contained in the Aviation Unmanned Aircraft Systems, AAS.

Certifications

FCC Amateur Technician Radio License obtained after UAS 122

Aviation Unmanned Aircraft Systems: GIS, CPC

Length: 23 credits

Program Contacts

- Offered by Lane Aviation Academy
- Program Coordinator: Solomon Singer, singers@lanecc.edu
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Estimated Cost: \$ 6,848

- Resident Tuition: \$ 3,048
- Technology Fees: \$ 299
- General Student Fees: \$ 437
- Online Course Fee: \$ 60 (if applicable)
- Books / Course Materials: \$ 600
- Program Specific Fees: \$ 1,905
- Other Costs: \$ 500 (if applicable for computer + internet)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, at one of the outreach centers, or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

This Aviation UAS GIS CPC provides a stackable certificate that demonstrates proficiency in Geospatial Software, Unmanned Aircraft mapping and mission operations in actual field conditions, and data-gathering processes and GIS product generation.

Students who complete this program will be able to:

- PLO 1 - Integrate unmanned flights into the NAS safely and effectively
- PLO 2 - Safely and effectively plan and execute field missions in a variety of situations utilizing current unmanned aircraft systems
- PLO 3 - Work safely and effectively within a crew/team environment utilizing current unmanned technology
- PLO 4 - Successfully obtain and utilize Federal Aviation Administration waivers
- PLO 5 - Apply the principles of photography, videography, and mission-specific specialized flight maneuvers in unmanned operations
- PLO 6 - Utilize spatial data and GIS technology to make or inform appropriate decisions and create deliverable geospatial products
- PLO 7 - Effectively apply and utilize Crew Resource Management (CRM) and Aeronautical Decision-Making (ADM) strategies to ensure safe and effective UAS operations and procedures
- PLO 8 - Utilize effective and industry-standard documentation procedures for UAS flight operations and maintenance activities

Admission Information

There will be a separate program application submitted by the student to the Program Director, and approval is required to be enrolled in the Associates of Applied Science (A.A.S) in Aviation Unmanned Aircraft Systems. More information can be found here: <https://www.lanecc.edu/programs-academics/academic-departments/aviation-academy>

Program Requirements

Program Core Courses

Program Core courses must be completed with a grade of C- or better, or Pass.

- GIS 151 - Digital Earth 4 Credit(s)
- GIS 245 - GIS 1 4 Credit(s)
- GIS 246 - GIS 2 4 Credit(s)
- UAS 123 - UAS Part 107 License Lab 1 Credit(s)
- UAS 124A - Intro Flight Lab 1 Credit(s)
- UAS 124B - Advanced Operations Flight Lab 1 Credit(s)
- UAS 124D - UAS Field Operations 1 Credit(s)
- UAS 124E - Advanced Sensor Lab 1 Credit(s)
- UAS 230 - UAS Data Acquisition and Analysis 3 Credit(s)
- UAS 231 - Advanced Sensor 3 Credit(s)

Notes

- This program follows Career Pathway Certificate of Completion Requirements unless otherwise specified.
- This program is fully contained in the Aviation Unmanned Aircraft Systems, AAS

Aviation Unmanned Aircraft Systems: Maintenance, CPC

Length: 31 credits

Program Contacts

- Offered by Lane Aviation Academy
- Program Coordinator: Solomon Singer, singers@lanecc.edu
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Estimated Cost: \$ 8,642

- Resident Tuition: \$4,108
- Technology Fees: \$ 403
- General Student Fees: \$ 437
- Online Course Fee: \$ 70 (if applicable)
- Books / Course Materials: \$ 300
- Program Specific Fees: \$ 3,325

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, at one of the outreach centers, or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

This Aviation UAS Maintenance CPC provides a stackable certificate that demonstrates proficiency in UAS preventive, routine, and technician-level maintenance, documentation, and aviation-standard procedures related to UAS operations.

Students who complete this program will be able to:

PLO 1 - Safely and effectively plan and execute field missions in a variety of situations utilizing current unmanned aircraft systems

PLO 2 - Design, assemble, build, program, maintain and fly hobby and aviation-grade unmanned equipment and systems

PLO 3 - Work safely and effectively within a crew/team environment utilizing current unmanned technology

PLO 4 - Effectively apply and utilize Crew Resource Management (CRM) and Aeronautical Decision-Making (ADM) strategies to ensure safe and effective UAS operations and procedures

PLO 5 - Utilize effective and industry-standard documentation procedures for UAS flight operations and maintenance activities

Admission Information

There will be a separate program application submitted by the student to the Program Director, and approval is required to be enrolled in the Associates of Applied Science (A.A.S) in Aviation Unmanned Aircraft Systems. More information can be found here: <https://www.lanec.edu/aviationacademy>

Program Requirements

Program Core Courses

Program Core courses must be completed with a grade of C- or better, or Pass.

- AP 127 - Aerodynamics 3 Credit(s)
- UAS 121 - Multirotor Systems 3 Credit(s)
- UAS 122 - Ground Control Radio Systems 2 Credit(s)
- UAS 210 - UAS Airframe Testing and Manufacture 5 Credit(s)
- UAS 211 - UAS Autopilot Ardupilot and Piccolo 3 Credit(s)
- UAS 212 - UAS Power Systems 5 Credit(s)
- UAS 213 - UAS Standards and Documentation 2 Credit(s)
- UAS 214 - UAS Avionics and Electrical Systems 4 Credit(s)
- UAS 215 - UAS Computer Aided Design/ Computer Aided Manufacture, Solidworks 4 Credit(s)

Notes

- This program follows Career Pathway Certificate of Completion Requirements unless otherwise specified.
- This program is fully contained in the Aviation Unmanned Aircraft Systems, AAS.

Business Management: Small Business Ownership, CPC

Length: 29 credits

Program Contacts

- Offered by the Business Department
- Program Coordinators: LuAnne Johnson (johnsonlm@lanec.edu, 541-463-5767 and Tim Hovet (hovett@lanec.edu, 541-463-5537
- Academic Advising: <https://www.lanec.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanec.edu
- Cooperative Education: <https://www.lanec.edu/programs-academics/internships-cooperative-education>

Estimated Cost: \$6,451

- Resident Tuition: \$3,843*
- Technology Fees: \$377
- General Student Fees: \$271**
- Online Course Fee: \$250 (If applicable)
- Books / Materials: \$810
- Other Costs or Expenses: \$900*** (if applicable for computer + internet)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanec.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is designed for individuals who may want to own and operate a business in the near term or future. This includes, but is not limited to, trade and professional students, community members and former graduates with skills that are marketable in the business environment; individuals with skill sets that are commonly delivered in a freelancer or independent contractor capacity; and service providers, small retailers and food service providers that may potentially organize as a business.

Students who complete this program will be able to:

PLO 1 - Design and utilize QuickBooks as a tool to efficiently meet an organizations accounting and tax compliance responsibilities

PLO 2 - Determine the appropriate type of business entity for various business endeavors, and understand, outline and evaluate the components of a business plan

PLO 3 - Recognize how the major elements of the marketing process apply to small business marketing situations

PLO 4 - Understand his or her motivations and the reality of owning a small business, and understand the legal implications of being a business owner

PLO 5 - Understand the historical role and evolving trends in small business including: transitions to paperless environments, globalization, role of e-commerce, and sustainability

PLO 6 - Understand the link between accounting data and the underlying business reality, and use the accounting equation for analyzing business transactions and creating financial statements

PLO 7 - Understand the role of accounting in planning, operating, and reporting an organization's activities and management's fiduciary responsibility to safeguard assets and be able to discuss the adequacy of internal controls

PLO 8 - Use cell, row and column, and worksheet formatting techniques to create professional-looking spreadsheets for analyzing business decisions

PLO 9 - Use sophisticated Excel functions to perform sensitivity analysis to solve business problems

Program Requirements

Program Core Courses

Program Core courses must be completed with a letter grade of C- or better. P/NP not accepted.

- EL 121 - Effective Digital Learning 1-3 Credit(s) (complete 1 credit; recommended to take business focused section)
- BA 101 - Introduction to Business 4 Credit(s)
- BA 206 - Management Fundamentals 4 Credit(s)
- BA 226 - Business Law 4 Credit(s)
- BA 250 - Small Business Management 4 Credit(s)
- BT 123 - MS EXCEL for Business 4 Credit(s)
- BT 165 - Introduction to the Accounting Cycle 4 Credit(s)

Complete one of the following:

- BT 163 - QuickBooks 4 Credit(s)

- BA 223 - Marketing 4 Credit(s)

Notes

- This program follows Career Pathway Certificate of Completion Requirements unless otherwise specified.
- This program is fully contained in the Business Management, AAS degree.

Computer Network Monitoring and Management, CPC

Length: 12 credits

Program Contacts

- Offered by the Computer and Information Technology department
- Program Coordinator: Joseph Colton, coltonj@lanecc.edu, 541-463-5249
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Estimated Cost: \$3,726

- Resident Tuition: \$1,638*
- Technology Fees \$156
- General Student Fees \$ 136**
- Online Course Fees \$ 120 (if applicable)
- Program Specific Fees: \$ 26 (data fee)
- Other Costs and Expenses: \$ 1650*** (if applicable for Computer + Internet)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to prepare graduates to manage and monitor modern network operating systems and the services provided by current, industry-standard platforms, including troubleshooting and proactive management for growth.

Students who complete this program will be able to:

PLO 1 - Understand the performance fundamentals required to keep computer networks efficient

PLO 2 - Install and configure Windows and Linux servers and Cisco routers and switches

PLO 3 - Identify sources of network performance problems and resolve them

PLO 4 - Implement the SNMP protocol on various networked devices

PLO 5 - Understand the importance of proactive management and planning for growth

PLO 6 - Install and configure an enterprise network monitoring package to track performance and availability of services

PLO 7 - Implement event handlers and notification/alert systems

PLO 8 - Use protocol analysis software to monitor traffic and solve network problems

Program Requirements

Program Core Courses

Program Core courses must be completed with a letter grade of C- or better.

P/NP is not accepted.

NOTE: CIS 140U and CS 179 are prerequisites not embedded into the program

but are required prior to enrolling in CS 240U and CS 288. Work with your academic advisor on when to take these prerequisites.

- CS 240U - Advanced Unix/Linux: Server Management 4 Credit(s)
- CS 240W - Advanced Windows: Server Management 4 Credit(s)
- CS 288 - Network Monitoring and Management 4 Credit(s)

Notes

- This program is fully contained in the Computer Network Operations, AAS degree
- This program follows the Career Pathway Certificate of Completion Requirements unless otherwise specified.

Computer Programming: Database Specialist, CPC

Length: 20 credits

Program Contacts

- Offered by the Computer and Information Technology department
- Program Coordinator: Brian Bird, birdb@lanecc.edu, 541-463-3024
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Estimated Cost: \$5,603

- Resident Tuition: \$2,650*
- Technology Fees: \$260
- General Student Fees: \$407**
- Online Course Fees: \$ 200 (if applicable)
- Books / Materials: \$8 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.
- Program Specific Fees: \$78 (Data Fee)
- Other Cost / Expenses: \$2000*** (if applicable for Computers + Internet)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to prepare technicians for entry-level positions as database specialists.

Students who complete this program will be able to:

PLO 1 - Design, implement, test, debug and document relational database systems using a variety of current tools and technologies

PLO 2 - Explain and model the relationship between computer programs and organizational processes

PLO 3 - Translate database related problems into SQL logic and expressions

PLO 4 - Use appropriate library and information resources to research database technologies and support lifelong technical learning

Program Requirements

Program Core Courses

Program Core courses must be completed with a letter grade of C- or better.

P/NP is not accepted.

NOTE: CS 161C, CS 161N, and CS 161P each have a different prerequisite that must be completed first. Work with your academic advisor on what and when to take the prerequisite.

Computer Science Sequence - Complete one of the following options (8 credits):

Option 1: C#

- CS 161N - Computer Science 1 4 Credit(s) (recommended)
- CS 162N - Computer Science 2 4 Credit(s) (recommended)

Option 2: C++

- CS 161C - Computer Science 1 4 Credit(s)
- CS 162C - Computer Science 2 4 Credit(s)

Option 3: Python

- CS 161P - Computer Science 1 4 Credit(s)
- CS 162P - Computer Science 2 4 Credit(s)

Complete all of the following (12 credits):

- CS 275 - Basic Database SQL 4 Credit(s)
- CS 276 - Database Systems and Modeling 4 Credit(s)
- CS 234N - Advanced Programming: C# 4 Credit(s)

Notes

- This program is fully contained in the Computer Programming, AAS degree.
- This program follows the Career Pathway Certificate of Completion Requirements unless otherwise specified.
- Computer programming languages: Students who complete more than one CS 161 or CS 162 programming language course should be aware that transfer institutions may count multiple 161 or 162 courses as repeats, **and may not accept them in transfer**. Students wishing to complete multiple programming courses should first take a CS 161/162 series and then enroll in CS 133/233 course series for any subsequent programming languages.

Certifications

By completing CS 275 and CS 276, students can take the Oracle Certified Foundations Associate Exam.

Computer Programming: Front End Web Development, CPC

Length: 20 credits

Program Contacts

- Offered by the Computer and Information Technology department
- Program Coordinator: Brian Bird, birdb@lanecc.edu, 541-463-3024
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Estimated Cost: \$4,480

- Resident Tuition: \$2,650*
- Technology Fees: \$260
- General Student Fees: \$407**
- Online Course Fee: \$200 (if applicable)
- Books / Materials: \$35 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees \$78 (Data Fee)
- Other Cost / Expenses: \$850*** (if applicable for Computer + Internet)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to provide students with the opportunity to develop the knowledge and skills necessary to become an entry level front-end web developer. A front-end web developer is responsible for implementing visual and interactive elements that users engage with through their web browser when using a web application. Students who complete this program will have strong skills in the following front-end web development technologies: HTML, CSS, object-oriented programming and JavaScript programming. They will also have been exposed to several JavaScript frameworks that are used in modern front-end development.

Students who complete this program will be able to:

PLO 1 - Design and build interactive web sites using client-side technologies

PLO 2 - Design and build object-oriented programs

PLO 3 - Evaluate your own work and the work of others

Program Requirements

Program Core Courses

Program Core courses must be completed with a letter grade of C- or better.

P/NP is not accepted.

NOTE: CIS 125A or CS 160 and math serve as prerequisites for some courses in the program. These must be completed before taking the required course. Work with your academic advisor on when to take the prerequisite.

- CIS 195 - Web Authoring 1 4 Credit(s)

JavaScript (8 credits) - Complete both of the following:

- CS 133JS - Beg. Programming: JavaScript 4 Credit(s)
- CS 233JS - Intermediate Programming: JavaScript 4 Credit(s)

JavaScript (8 credits) - Complete both of the following:

- CS 161N - Computer Science 1 4 Credit(s)
- CS 162N - Computer Science 2 4 Credit(s) or CS 295R - Web Development 1: React 4 Credit(s)

Notes

- This program is fully contained in the Computer Programming, AAS degree.
- This program follows the Career Pathway Certificate of Completion Requirements unless otherwise specified.
- Computer programming languages: Students who complete more than one CS 161 or CS 162 programming language course should be aware that transfer institutions may count multiple 161 or 162 courses as repeats, **and may not accept them in transfer**. Students wishing to complete multiple programming courses should first take a CS 161/162 series and then enroll in CS 133/233 course series for any subsequent programming languages.

Construction Trades, General Apprenticeship: Trade Worker Apprenticeship Technologies, CPC

Length: Varies depending on trade area

Program Contacts

- Offered by Advanced Technology
- Program Coordinator: Joy Crump, crumpj@lanecc.edu, 541-463-5496
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Estimated Cost: \$4,202

- Resident Tuition: \$2,650*
- Technology Fees: \$260
- General Student Fees: \$813**
- Online Course Fee (if applicable)
- Books / Course Materials: \$479 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecce.edu/costs-admission/tuition-fees-and-payments/credit-tuition>.

* Resident tuition is based on all program requirements (general education, core, directed electives). Any prerequisites required prior to the entry of the program will be listed separately.

** General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to provide a structured system of training in construction fundamentals to prepare students with the skills and knowledge required to enter the construction trade.

Students who complete this program will be able to:

PLO 1 - Apply theory as it relates to trade competencies

PLO 2 - Successfully complete all required core related-training with a grade of C or better for individual trade

PLO 3 - Perform the duties and responsibilities of the individual construction trade/occupation

PLO 4 - Repair, install, and maintain a variety of building construction projects using trade specific tools and techniques in compliance with building codes and OSHA regulations

Admission Information

Students must be registered apprentices with the State of Oregon Bureau of Labor and Industries and accepted by a Joint Apprenticeship Training Committee. Information is available at boli.state.or.us.

Program Requirements

Program Core Courses

Complete all courses listed in one of the following trades. Program Core course must be completed with a letter grade of C or better. P/NP is not accepted.

Carpenters (18 credits)

- APR 115 - Carpentry Skill Fundamentals 3 Credit(s)
- APR 116 - Carpentry Framing Fundamentals 3 Credit(s)
- APR 117 - Carpentry Framing and Introduction to Concrete 3 Credit(s)
- APR 118 - Carpentry Framing and Finishing 3 Credit(s)
- APR 119 - Carpentry Commercial Plans and Exterior Finish 3 Credit(s)
- APR 120 - Carpentry Interior Finish 3 Credit(s)

HVAC Technician/Installer (12 credits)

- APR 101A - Trade Skills Fundamentals 4 Credit(s)
- APR 140 - Electrical Systems Installation Methods 4 Credit(s)
- APR 190 - Electrical Theory 1 1-4 Credit(s) (take 4 cr of APR 190)

Plumbers (20 credits)

- APR 160 - Plumbing Skill Fundamentals 4 Credit(s)
- APR 161 - Plumbing Materials and Fixtures 4 Credit(s)
- APR 162 - Plumbing Basic Waste Water Systems 2 Credit(s)
- APR 163 - Plumbing Calculations and Print Reading 4 Credit(s)
- APR 164 - Plumbing Basic Installation 1 4 Credit(s)
- APR 165 - Plumbing Basic Installation 2 2 Credit(s)

Sheet Metal Workers (12 credits)

- APR 101A - Trade Skills Fundamentals 4 Credit(s)
- APR 170 - Introduction to Sheet Metal Apprenticeship 4 Credit(s)
- APR 171 - Sheet Metal Basic Layout 4 Credit(s)

Notes

- This program follows Career Pathway Certificate of Completion Requirements unless otherwise specified.
- This program is contained in the Construction Trades, General Apprenticeship, AAS.

Culinary and Baking: Commercial Cooking, CPC

Length: 22 credits

Program Contacts

- Offered by the Culinary and Baking department
- Program Coordinator: Clive Wanstall, wanstallc@lanecce.edu, 541-462-3507
- Academic Advising: <https://www.lanecce.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecce.edu
- This program is connected to Career Pathways Coaching. Contact your coach at careerpathways@lanecce.edu

Estimated Cost: \$ 6,747

- Resident Tuition: \$ 2,915
- Technology Fees: \$ 286
- General Student Fees \$ 407
- Online Course Fee: (if applicable)
- Books / Course Materials: \$ 150 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: 1,100 (culinary course fees)
- Other Cost / Expenses: \$ 200 (Uniforms + Shoes)
- Differential Fees: \$ 1,689

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecce.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

**** Any special info about computer needs or specifications.

Program Learning Outcomes

The purpose of this program is to prepare commercial cooks with practical skills and safe food preparation technical knowledge to enable successful entry and potentially accelerated upward mobility in a wide range of kitchens and food production facilities.

Students who complete this program will be able to:

PLO 1 - Safely and effectively operate current standard commercial cooking equipment including cooktops, food processors, ovens (baking, convection, and conventional), dough mixers, meat slicers, and a variety of kitchen hand tools

PLO 2 - Apply fundamental theory, culinary skills and techniques, and time management principles to prepare industry-standard food products

PLO 3 - Consistently employ sanitation concepts including high standards of personal hygiene, appropriate cleaning and sanitizing of equipment, and correct processing and storage of potentially hazardous foods according to the HACCP concept

PLO 4 - Define and employ the basic terms and key concepts used in the preparation of volume foods

Admission Information

- First qualified first admitted entry; There is a separate program application located at <https://www.lanecce.edu/programs-academics/areas-study/culinary-hospitality-and-tourism/culinary-arts/culinary-and-baking-program-application>

- Students should apply even if full, as students will be added to a waitlist, or we may add additional sections as needed.
- The program includes a one-week-long required onboarding course in the week of September 12. Students will be automatically enrolled for this free course once they have been formally admitted into the program.
- There are non-refundable program fees to cover tools and uniforms. There is a uniform fitting around four weeks prior to classes commencing.
- This program has a Late Summer/Fall start.
- Must obtain Oregon Health Authority Food Handlers Certification before being accepted into the program.
- Students pursuing the one-year certificate generally choose to initially concentrate in either Culinary or Baking.

Program Requirements

Program Core Courses

Program Core courses must be completed with a grade of C- or better, or Pass.

- CA 160 - Introduction to Cooking Theories 1 7 Credit(s)
- CA 162 - Introduction to Cooking Theories 2 7 Credit(s)
- CA 294 - Advanced Cooking Theories 3 8 Credit(s)

Notes

- This program follows Career Pathway Certificate of Completion Requirements.
- This program is fully contained in the Culinary and Baking, 1-yr Certificate.
- A Lane County Food Handlers card is required for entry into the program.
- This certificate is a fall term start only.
- A multi-week orientation is required to participate in this program. The orientation begins after Labor Day.
- Students interested in this program will also be enrolled in Career Coaching through the Career Pathways Department.

Drafting for Commercial Construction, CPC

Length: 16 credits

Program Contacts

- Offered by: Advanced Technology
- Program Coordinator: Margaret Robertson, robertsonm@lanecc.edu
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Estimated Cost: \$ 3,039

- Resident Tuition: 2,120*
- Technology Fees: \$208
- General Student Fees: \$271** (If applicable)
- Online Course Fee: \$160
- Books / Course Materials: \$650 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Other Cost / Expenses: \$ 500*** (Computer/Internet)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Hardware: In order to run AutoCAD, Revit, and SolidWorks software, students need a computer with Windows 10 or newer operating system; CPU of 3.3 GHz or

higher; 8 GB of RAM, with 16 GB recommended; 30 GB free disk space for download and installation, plus 500 GB or more storage; graphics card capable of 24-bit color and DirectX 11 compliant, such as Nvidia Quadro series, AMD FirePro series, or AMD Radeon series; at least two USB ports; and an external mouse. (A computer with Mac OS can run AutoCAD software, but not Revit or SolidWorks.) A limited number of laptops are available on loan from the LCC Student Helpdesk. In addition, students need a way to store backup copies of all files, such as a flash drive, external hard drive, or cloud service.

Connectivity: Students need a reliable internet connection; a browser such as Google Chrome or Firefox; and a robust antivirus and firewall product such as McAfee or Norton, kept up to date.

Software: Students need Microsoft Office, with Word, Excel, and PowerPoint, available free to LCC students. Students will need the current version of AutoCAD, Revit, and SolidWorks software and will get instructions in classes for downloading free educational versions.

Program Learning Outcomes

The purpose of this program is to prepare students and working professionals to collaborate with contractors, architects, engineers, and designers (AEC) as effective members of AEC teams.

Students who complete this program will be able to:

PLO 1 - Create architectural drawings which follow recognized national standards for format, annotation, lines, and symbols

PLO 2 - Identify the components of a typical set of construction documents

PLO 3 - Analyze forces acting on structures using the concept of equilibrium

PLO 4 - Use graphical methods or simple trigonometry to analyze forces on beams, trusses, and columns

PLO 5 - Describe the basic contracting process for commercial projects

Program Requirements

Program Core Courses

All courses must be completed with a letter grade of C- or better. P/NP is not accepted.

- DRF 160 - Computer-Aided Drafting and Design 4 Credit(s)
- DRF 205 - Drafting: Structures 4 Credit(s)
- DRF 210 - Commercial Buildings 4 Credit(s)
- DRF 220 - Building Information Modeling 4 Credit(s)

Notes

- This program is fully contained in the Drafting, AAS degree.
- This program follows the Career Pathway Certificate of Completion Requirements unless otherwise specified.
- A high school diploma or equivalent is recommended for all applicants to this program.

Drafting for Manufacturing, CPC

Length: 12 credits

Program Contacts

- Offered by: Advanced Technology
- Program Coordinator: Margaret Robertson, robertsonm@lanecc.edu, 541-463-3143
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Estimated Cost: \$2,952

- Resident Tuition: \$1,590*
- Technology Fees: \$1156
- General Student Fees: \$136** (if applicable)
- Online Course Fee: \$120.00
- Books / Course Materials: \$450.00 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Other Cost / Expenses: \$ 500*** (Computer/Internet)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Hardware: In order to run AutoCAD, Revit, and SolidWorks software, students need a computer with Windows 10 or newer operating system; CPU of 3.3 GHz or higher; 8 GB of RAM, with 16 GB recommended; 30 GB free disk space for download and installation, plus 500 GB or more storage; graphics card capable of 24-bit color and DirectX 11 compliant, such as Nvidia Quadro series, AMD FirePro series, or AMD Radeon series; at least two USB ports; and an external mouse. (A computer with Mac OS can run AutoCAD software, but not Revit or SolidWorks.) A limited number of laptops are available on loan from the LCC Student Helpdesk. In addition, students need a way to store backup copies of all files, such as a flash drive, external hard drive, or cloud service.

Connectivity: Students need a reliable internet connection; a browser such as Google Chrome or Firefox; and a robust antivirus and firewall product such as McAfee or Norton, kept up to date.

Software: Students need Microsoft Office, with Word, Excel, and PowerPoint, available free to LCC students. Students will need the current version of AutoCAD, Revit, and SolidWorks software and will get instructions in classes for downloading free educational versions.

Program Learning Outcomes

This program is designed for those entering or currently working in the field of manufacturing who wish to deepen their understanding of mechanical drawing standards and methods and to develop their two-dimensional drawing and three-dimensional computer modeling skills.

Students who complete this program will be able to:

PLO 1 - Appropriately apply mechanical dimensioning and tolerancing standards

PLO 2 - Use computer-aided drafting software to create mechanical drawings

PLO 3 - Use solid modeling software to create three-dimensional parts, assemblies, and drawings with parts lists

Program Requirements

Program Core Courses

All courses must be completed with a letter grade of C- or better. P/NP is not accepted.

- DRF 121 - Mechanical Drafting 4 Credit(s)
- DRF 160 - Computer-Aided Drafting and Design 4 Credit(s)
- DRF 245 - Solid Modeling 4 Credit(s)

Notes

- This program is fully contained in the Drafting, AAS degree.
- This program follows the Career Pathway Certificate of Completion Requirements unless otherwise specified.
- A high school diploma or equivalent is recommended for all applicants to this program.

Drafting for Residential Construction, CPC

Length: 12 credits

Program Contacts

- Offered by: Advanced Technology
- Program Coordinator: Margaret Robertson, robertsonm@lanecc.edu
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Estimated Cost: \$ 2,952

- Resident Tuition: \$1,590*
- Technology Fees: \$156
- General Student Fees: \$136** (if applicable)

- Online Course Fee: \$120
- Books / Course Materials: \$450 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Other Cost / Expenses: \$ 500*** (Computer/Internet)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Hardware: In order to run AutoCAD, Revit, and SolidWorks software, students need a computer with Windows 10 or newer operating system; CPU of 3.3 GHz or higher; 8 GB of RAM, with 16 GB recommended; 30 GB free disk space for download and installation, plus 500 GB or more storage; graphics card capable of 24-bit color and DirectX 11 compliant, such as Nvidia Quadro series, AMD FirePro series, or AMD Radeon series; at least two USB ports; and an external mouse. (A computer with Mac OS can run AutoCAD software, but not Revit or SolidWorks.) A limited number of laptops are available on loan from the LCC Student Helpdesk. In addition, students need a way to store backup copies of all files, such as a flash drive, external hard drive, or cloud service.

Connectivity: Students need a reliable internet connection; a browser such as Google Chrome or Firefox; and a robust antivirus and firewall product such as McAfee or Norton, kept up to date.

Software: Students need Microsoft Office, with Word, Excel, and PowerPoint, available free to LCC students. Students will need the current version of AutoCAD, Revit, and SolidWorks software and will get instructions in classes for downloading free educational versions.

Program Learning Outcomes

This program is designed for those entering or currently practicing in the field of residential construction who wish to deepen or develop their understanding of construction documents and basic design.

Students who complete this program will be able to:

PLO 1 - Use computer-aided drafting software to create residential construction documents

PLO 2 - Create architectural drawings which follow recognized national standards for format, annotation, lines, and symbols

PLO 3 - Analyze forces acting on structures using the concept of equilibrium

PLO 4 - Use graphical methods or simple trigonometry to analyze forces on beams, trusses, and columns

Program Requirements

Program Core Courses

All courses must be completed with a letter grade of C- or better. P/NP is not accepted.

- DRF 137 - Architectural Plans 4 Credit(s)
- DRF 160 - Computer-Aided Drafting and Design 4 Credit(s)
- DRF 205 - Drafting: Structures 4 Credit(s)

Notes

- This program is fully contained in the Drafting, AAS degree.
- This program follows the Career Pathway Certificate of Completion Requirements unless otherwise specified.
- A high school diploma or equivalent is recommended for all applicants to this program.

Early Childhood Education: Guidance and Curriculum, CPC

Length: 20 credits

Program Contacts

- Offered by the Social Science Division
- Program Coordinator: Kathleen Lloyd, lloydk@lanecc.edu, 541-463-5287
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Estimated Cost: \$4,001

- Resident Tuition: \$2,650*
- Technology Fees: \$260
- General Student Fees: \$271** (if applicable)
- Online Course Fee: \$200
- Books / Course Materials: \$500 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$120 (MMR immunization if needed)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>.

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to prepare graduates to work as early childhood education teaching assistants.

Students who complete this program will be able to:

PLO 1 - Plan learning opportunities that align with D.A.P. (developmentally appropriate practice)

PLO 2 - Examine philosophies, approaches, and theories of development relating to the early years

PLO 3 - Describe the use of positive guidance strategies that support moral autonomy in young children

PLO 4 - Recognize the developmental needs and characteristics of young children in cognitive, language, social, emotional, and physical domains

Program Requirements

Program Core Courses

Core classes must be completed with a grade of C- or better, or Pass.

- ECE 120 - Introduction to Early Childhood 2 Credit(s)
- ECE 130 - Guidance of Young Children 3 Credit(s)
- ECE 150 - Creative Activities for Children 3 Credit(s)
- ECE 160 - Exploring Early Childhood Curriculum 4 Credit(s)
- ECE 210 - Applying Early Childhood Curriculum 4 Credit(s)

Supervised Teaching - Complete 4 credits of the following:

- ECE 240 - Supervised Student Teaching 4 Credit(s)

Notes

- This program follows Career Pathway Certificate of Completion Requirements unless otherwise specified.
- This program is fully contained in the Early Childhood Education, AAS degree.
- Immunization is required prior to enrolling in ECE 240 - Supervised Student Teaching. More information at <https://www.lanecc.edu/programs-academics/areas-study/social-sciences-social-services-and-education/early-childhood-education>.

- Some ECE and HDFS courses are offered through College Now at high schools in Lane County and outlying areas. For more information, see <https://www.lanecc.edu/community/education-community/college-now/courses-high-school>.
- Students seeking support with Reading / Writing / Math or English Language skills while transitioning to Early Childhood classes may apply to PASS Lane ECE. Contact Marcia Koenig (koenigm@lanecc.edu) 541-463-5818; Bldg 4/215.
- Students receiving SNAP food stamp benefits who are completing ECE Certificates may contact STEP at Lane program for coaching and access to financial resources.
- Prerequisites are not required for most ECE courses. See course descriptions.
- Transfer Credit for Prior Learning may be granted based on OCCD Oregon Registry Steps. Please contact the Program Coordinator, Kathleen Lloyd.
- Students seeking this certificate will complete 90 hours of student teaching (ECE 240). Please contact the Program Coordinator, Kathleen Lloyd, for further information and to schedule your hours.

Credential

ECE students are encouraged to enroll in the Oregon Registry (pdx.edu/occd), a statewide professional recognition program that records and recognizes the growth and achievements of early childhood care and education professionals. Step 7 provides the Child Development Associate (CDA) Credential. College credit is also available for individuals at Step 7 or higher on the Oregon Registry, based on community training hours. Child Development Associate (CDA).

Early Childhood Education: Infant and Toddler, CPC

Length: 17 credits

Program Contacts

- Offered by the Social Science Division
- Program Coordinator: Kathleen Lloyd, lloydk@lanecc.edu, 541-463-5287
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Estimated Cost: \$3,3735

- Resident Tuition: \$2,253*
- Technology Fees: \$221
- General Student Fees: \$271** (if applicable)
- Online Course Fee: \$170
- Books / Course Materials: \$700 (Some courses use Open Educational Resources (OER), which are free or low-cost materials)
- Program Specific Fees: \$120 (MMR immunization if needed)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to prepare students to plan environments of high quality for infants and toddlers and to carry out developmentally appropriate curriculum.

Students who complete this program will be able to:

PLO 1 - Analyze the elements in developmentally appropriate environments for

infants and toddlers

PLO 2 - Describe the use of positive guidance strategies that support moral autonomy in young children

PLO 3 - Recognize the developmental needs and characteristics of young children in cognitive, language, social, emotional, and physical domains

PLO 4 - Define state rules and regulations that govern certification of infant and toddler centers

Program Requirements

Program Core Courses

Core classes must be completed with a grade of C- or better, or Pass.

- ECE 130 - Guidance of Young Children 3 Credit(s)
- ECE 170 - Infants and Toddlers Development 4 Credit(s)
- ECE 250 - Infant and Toddler Environments 3 Credit(s)
- HDFS 226 - Child Development 3 Credit(s)
- **Supervised Teaching - Complete 4 credits of the following:**
- ECE 240 - Supervised Student Teaching 4 Credit(s)

Notes

- This program follows Career Pathway Certificate of Completion Requirements unless otherwise specified.
- This program is fully contained in the Early Childhood Education, AAS degree.
- Immunization is required prior to enrolling in ECE 240 - Supervised Student Teaching. More information at <https://www.lanecce.edu/programs-academics/areas-study/social-sciences-social-services-and-education/early-childhood-education>
- Some ECE and HDFS courses are offered through College Now at high schools in Lane County and outlying areas. For more information, see <https://www.lanecce.edu/community/education-community/college-now/courses-high-school>.
- Students seeking support with Reading / Writing / Math or English Language skills while transitioning to Early Childhood classes may apply to PASS Lane ECE. Contact Marcia Koenig (koenigm@lanecce.edu) 541-463-5818; Bldg 4/215.
- Students receiving SNAP food stamp benefits who are completing ECE Certificates may contact STEP at Lane program for coaching and access to financial resources.
- Prerequisites are not required for most ECE courses. See course descriptions.
- Transfer Credit for Prior Learning may be granted based on OCCD Oregon Registry Steps. Please contact the Program Coordinator, Kathleen Lloyd.
- Students seeking this certificate will complete 90 hours of student teaching (ECE 240). Please contact the Program Coordinator, Kathleen Lloyd, for further information and to schedule your hours.

Credential

ECE students are encouraged to enroll in the Oregon Registry (<https://my.oregonregistryonline.org/>), a statewide professional recognition program that records and recognizes the growth and achievements of early childhood care and education professionals. Step 7 provides the Child Development Associate (CDA) Credential. College credit is also available for individuals at Step 7 or higher on the Oregon Registry, based on community training hours. Child Development Associate (CDA).

Early Childhood Teacher Aide, CPC

Length: 17 credits

Program Contacts

- Offered by the Social Science Division
- Program Coordinator: Kathleen Lloyd, lloydk@lanecce.edu, 541-463-5287
- Academic Advising: <https://www.lanecce.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecce.edu

Estimated Cost: \$3,635

- Resident Tuition: \$2,253*
- Technology Fees: \$221
- General Student Fees: \$271 ** (if applicable)
- Online Course Fee: \$170
- Books / Course Materials: \$600 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$120 (MMR immunization if needed)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecce.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

** General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to prepare students to work in an early childhood education setting as a Teacher Aide 1 as defined by the Oregon Child Care Division. Students completing this certificate will also achieve Level 7.5 in the Oregon Professional Development Registry for Early Childhood

Students who complete this program will be able to:

- PLO 1 - Apply the principles of creative expression to plan developmentally appropriate experiences for young children in the arts
- PLO 2 - Examine philosophies, approaches, and theories of development related to early childhood
- PLO 3 - Describe the use of positive guidance strategies that support moral autonomy in young children
- PLO 4 - Define health and safety state rules and regulations that govern the licensing of early childhood programs
- PLO 5 - Demonstrate, in a supervised setting, the use of positive guidance strategies that support moral autonomy in young children

Program Requirements

Program Core Courses

Program Core courses must be completed with a grade of C- or better, or Pass.

- ECE 105 - Health and Safety Issues in Early Childhood Education 2 Credit(s)
- ECE 120 - Introduction to Early Childhood 2 Credit(s)
- ECE 130 - Guidance of Young Children 3 Credit(s)
- ECE 150 - Creative Activities for Children 3 Credit(s)
- HDFS 226 - Child Development 3 Credit(s)

Supervised Teaching - Complete 4 credits of the following:

- ECE 240 - Supervised Student Teaching 4 Credit(s)

Notes

- This program follows Career Pathway Certificate of Completion Requirements.
- This program is fully contained in the Early Childhood Education, AAS.
- Immunization is required prior to enrolling in ECE 240 - Supervised Student Teaching. More information at <https://www.lanecce.edu/programs-academics/areas-study/social-sciences-social-services-and-education/early-childhood-education>
- Some ECE and HDFS courses are offered through College Now at high schools in Lane County and outlying areas. For more information, see <https://www.lanecce.edu/community/education-community/college-now/courses-high-school>.
- Students seeking support with Reading / Writing / Math or English Language skills while transitioning to Early Childhood classes may apply to PASS Lane ECE. Contact Marcia Koenig (koenigm@lanecce.edu) 541-463-5818; Bldg 4/215

- Students receiving SNAP food stamp benefits who are completing ECE Certificates may contact STEP at Lane program for coaching and access to financial resources.
- Prerequisites are not required for most ECE and HDFS courses. See course descriptions.
- Transfer Credit for Prior Learning may be granted based on OCCD Oregon Registry Steps. Please contact the Program Coordinator, Kathleen Lloyd.
- Students seeking this certificate will complete 90 hours of student teaching (ECE 240). Please contact the Program Coordinator, Kathleen Lloyd, for further information and to schedule your hours.

Credential

ECE students are encouraged to enroll in the Oregon Registry (<https://my.oregonregistryonline.org/>), a statewide professional recognition program that records and recognizes the growth and achievements of early childhood care and education professionals. Step 7 provides the Child Development Associate (CDA) Credential. College credit is also available for individuals at Step 7 or higher on the Oregon Registry, based on community training hours. Child Development Associate (CDA).

Electrician Apprenticeship Technologies: Trade Worker Apprenticeship Technologies, CPC

Length: Varies depending on trade area

Program Contacts

- Offered by Advanced Technology
- Program Coordinator: Joy Crump, crumpj@lanecc.edu, 541-463-5496
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Estimated Cost: \$4,294

- Resident Tuition: \$3,180*
- Technology Fees: \$312
- General Student Fees: \$30**
- Online Course Fee: \$240(if applicable)
- Books / Course Materials: \$532 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>.

* Resident tuition is based on all program requirements (general education, core, directed electives). Any prerequisites required prior to the entry of the program will be listed separately.

** General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to provide a structured system of training in electrical fundamentals to prepare students with the foundational skills and knowledge required to enter the electrical trade.

Students who complete this program will be able to:

PLO 1 - Apply theory to electrical systems

PLO 2 - Repair and maintain electrical systems according to state and safety regulations for the electrical apprenticeship trades

Admission Information

Students must be registered apprentices with the State of Oregon Bureau of Labor and Industries and accepted by a Joint Apprenticeship Training Committee. Information is available at boli.state.or.us.

Program Requirements

Program Core Courses

Program Core courses must be completed with a letter grade of C or better. P/NP is not accepted. Complete all courses listed in one of the following trades.

Limited Energy Technician License A (24 credits)

- APR 101A - Trade Skills Fundamentals 4 Credit(s)
- APR 140 - Electrical Systems Installation Methods 4 Credit(s)
- APR 141 - Limited Voltage Electrical Circuits 4 Credit(s)
- APR 142 - Devices, Testing Equipment and Code 4 Credit(s)
- APR 143 - Limited Voltage Cabling 4 Credit(s)
- APR 144 - Communications 4 Credit(s)

Manufacturing Plant Electrician (16 credits)

Complete the max number of credits listed for each course in this trade area.

- APR 190 - Electrical Theory 1 1-4 Credit(s)
- APR 191 - Electrical Theory 2 1-4 Credit(s)
- APR 285 - Motors 1-4 Credit(s)
- APR 286 - Motors 2 1-4 Credit(s)

Inside Wire Electrician (26 credits)

- APR 130 - Electrical Principles 5 Credit(s)
- APR 131 - Electrical Principles/Residential Wiring 5 Credit(s)
- APR 132 - Electrical Residential Wiring Lab 3 Credit(s)
- APR 133 - Electrical Generators, Transformers, and Motors 1 5 Credit(s)
- APR 134 - Electrical Generators, Transformers and Motors 2 5 Credit(s)
- APR 135 - Electrical, Generators, Transformers, and Motors Lab 3 Credit(s)

Notes

- This program follows Career Pathway Certificate of Completion Requirements unless otherwise specified.
- This program is fully contained in the Electrician Apprenticeship Technologies, AAS.

Fitness and Lifestyle Specialist: Group Exercise Instructor, CPC

Length: 18 credits

Program Contacts

- Offered by: Health and Physical Education
- Program Coordinator: Wendy Simmons, simmonsww@lanecc.edu, 541-463-5551
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu
- Cooperative Education: <https://www.lanecc.edu/programs-academics/internships-cooperative-education>

Estimated Cost: \$3,594

- Resident Tuition: \$2,385*
- Technology Fee: \$234
- General Student Fees: \$271**
- Online Course Fee: \$60 (if applicable)
- Books: \$599 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Other Costs / Expenses: \$45*** (Equipment)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>.

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to prepare students to become instructors in group fitness activities, such as aerobics, step, cycling, circuit, yoga, muscle conditioning, interval and other group exercise modalities. The curriculum and Interdisciplinary Practicum experiences serve as an entry point into the career of instructing group exercise. National certification and further training in specific styles of group exercise is often required.

Students who complete this program will be able to:

PLO 1 - Demonstrate excellent interpersonal skills in the areas of leadership, exercise motivation, and communication (written, verbal, and non-verbal)

PLO 2 - Design, evaluate, and instruct safe and effective group exercise classes utilizing a variety of exercise modalities

PLO 3 - Understand the role of proper nutrition and training techniques as they relate to physical fitness and weight management

PLO 4 - Apply nationally recognized standards for group exercise instruction. Work within their scope of practice and role in the fitness field while practicing appropriate and ethical professional conduct

PLO 5 - Respond to the needs of a diverse clientele and demonstrate inclusive practices; appropriately modify and adapt group classes

PLO 6 - Communicate to participants the benefits, risks, and precautions involved with participation in group exercise

PLO 7 - Apply basic exercise principles related to kinesiology, physiology, conditioning, resistance and functional training to ensure a safe and productive exercise experience

Program Application

The program application must be completed prior to enrollment in PE 280F - Co-op Ed: Fitness. Apply at <https://www.lanecc.edu/hp/fitness-and-lifestyle-specialist>

Program Requirements

Program Core Courses

FLS and PE 280F must be completed with a letter grade of C- or better. P/NP is not accepted. HE courses must be completed with a grade of C- or better, or Pass.

- FLS 120 - Fitness Assessment & Exercise Prescription - Field Techniques 3 Credit(s)
- FLS 130 - Principles of Strength Training and Conditioning Instruction 2 Credit(s)
- FLS 140 - Applied Exercise Physiology 1 3 Credit(s)
- FLS 150 - Techniques of Group Exercise Leadership 2 Credit(s)
- FLS 160 - Applied Anatomy and Kinesiology 3 Credit(s)
- FLS 170 - Mental Dynamics of Exercise and Sport 3 Credit(s)

CPR (1-3 credits) - Complete one of the following:

- HE 161 - Cardiopulmonary Resuscitation 1 Credit(s) Students with a current CPR Certification may substitute the CPR requirement. Contact Program Coordinator for details.
- HE 252 - First Aid 3 Credit(s)

Cooperative Education

Complete 1 credit of PE 280F Co-op Ed: Fitness

Notes

- This program is embedded in the Fitness and Lifestyle Specialist, 1-yr Certificate.
- This program follows the Career Pathway Certificate of Completion Requirements unless otherwise specified.
- HE 252 - First Aid may be substituted for HE 161 - Cardiopulmonary Resuscitation.

Health Information Management: Basic Health Care, CPC

Length: 24 credits

Program Contacts

- Offered by Health Professions
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu
- Project Specialist: Kathy Torvik; torvikk@lanecc.edu

Estimated Cost for Program: \$6,393

- Resident Tuition: \$3,180*
- Technology Fees: \$312
- General Student Fees \$271**
- Online Course Fee: \$240 (if applicable)
- Books / Course Materials: \$741 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$149 (application fee, background check, drug/alcohol screening, American Data Bank-COMPLIO account)
- Other Cost / Expenses: \$1,500*** (if applicable for computer/internet)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives). Any prerequisites required prior to the entry of the program will be listed separately.

** General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program, which can be completed entirely online, is to teach the basic skills needed for employment in an entry-level position in a healthcare setting. The outcomes include practice responsible and confidential communications and apply an understanding of health care laws and ethics are required in health care practice, work in a professional manner in the health care environment, understand and apply medical terminology appropriately, describe the anatomy and physiology of the various systems of the body, demonstrate basic computer skills and, recognize the scope of work the student is legally allowed to perform with their level of training. The certificate is fully embedded in the Health Records Technology certificate and multiple other Lane programs. It is designed for positions in health care such as patient transport, medical receptionist, environmental support, food services, and physical therapy aide.

Students who complete this program will be able to:

PLO 1 - Understand the requirements to work as a professional in a health care environment

PLO 2 - Demonstrate basic computer skills

PLO 3 - Apply the principles and privacy and security based on laws and professional ethics required in health care practices

PLO 4 - Demonstrate ability to use medical terminology appropriately, including abbreviations, acronyms, spelling, and pronunciation

PLO 5 - Demonstrate knowledge on the basics of human anatomy and physiology

PLO 6 - Demonstrate professional written and verbal communications in a responsible and confidential manner

PLO 7 - Demonstrate intellectually informed, appreciative, and understanding of various cultures, histories, as marked by class, race, gender, ethnicity, religion, nationality, sexual orientation, and other manifestations of difference

Program Requirements

Program Core Courses

Program Core courses must be completed with a letter grade of C or better. P/NP is not accepted.

Writing (4 credits) - Complete one of the following:

- WR 115 - Introduction to College Composition 4 Credit(s)

- WR 115W - Introduction to College Writing: Workplace Emphasis 3 Cr
- Any WR course higher than WR 115

Mathematics (4 credits):

- MTH 052 - Math for Health and Physical Sciences 4 Credit(s) or higher

Medical Terminology (3 credits):

- HP 100 - Medical Terminology 1 3 Credit(s)

Health Office Procedures (3 credits):

- HP 110 - Health Office Procedures 3 Credit(s)

Computer Literacy (4 credits) - Complete one of the following:

- CIS 101 - Computer Fundamentals 4 Credit(s)
- CS 120 - Concepts of Computing: Information Processing 4 Credit(s)

Human Body Systems (6 credits) - Complete both of the following:

- HP 150 - Human Body Systems 1 3 Credit(s)
- HP 152 - Human Body Systems 2 3 Credit(s)

Notes

- This program is fully contained in the Health Information Management (online), 1-yr Certificate.
- This program follows the Career Pathway Certificate of Completion Requirements unless otherwise specified.
- All courses can be completed online.
- Completion of BI 231, BI 232, and BI 233 with a letter grade of C or better is an acceptable equivalent for HP 150 and HP 152.
- BT 120 - MS WORD for Business can be used to meet the Computer Literacy requirement if completed prior to Summer 2020 (when the program's prerequisites changed).
- Students planning to pursue the Health Information Management (online), AAS, the Health Information Management (online), 1-yr Certificate, or the Health Information Management: Medical Coding (online), CPC will have met their program prerequisites upon completion of this program.
- All program prerequisites with the subject prefix CIS, CS, and HP must be completed no more than five years prior to HIM program acceptance. The prerequisites with CIS, CS, and HP prefixes can possibly be waived with current work experience in an HIM related field.
- Students who do not meet reading and/or math requirements may apply to PASS Lane Summer programming for alternative admission process. PASS Lane contact is Marcia Koenig (koenigm@lanecc.edu), Bldg. 11/244, 541-463-5818.

Health Information Management: Medical Coding (online), CPC

Program Length: 42 credits

Program Prerequisites: 21 credits

Program Contacts

- Offered by Health Professions
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu
- Project Specialist: Kathy Torvik; torvikk@lanecc.edu

Estimated Cost for Program: \$10,370

- Resident Tuition: \$5,565*
- Technology Fees: \$546
- General Student Fees: \$407**
- Online Course Fee: \$420 (if applicable)
- Books / Course Materials: \$1,783 (some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$149 (application fee, background check, drug/alcohol screening, American Data Bank-COMPLIO account)
- Other Cost / Expenses: \$1,500*** (if applicable for computer/internet)

Estimated Cost for Prerequisites: \$3,537

- Resident Tuition: \$2,783*
- Technology Fees: \$273

- General Student Fees: \$271**
- Online Course Fee: \$210 (if applicable)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives). Any prerequisites required prior to the entry of the program will be listed separately.

** General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program, which can be completed entirely online, is to prepare students to become coding specialists who review and analyze health records to identify relevant diagnoses and procedures for distinct patient encounters. The coding specialist is responsible for translating diagnostic and procedural phrases utilized by health care providers into coded form. The translation process requires interaction with the health care provider to ensure that the terms have been translated accurately. The coded information that is a product of the coding process is then utilized for reimbursement purposes, in the assessment of clinical care, to support medical research activity, and to support the identification of health care concerns critical to the public at large. A coding specialist must have a thorough understanding of the content of the medical record in order to be able to locate information to support or provide specificity for coding. The coding specialist must also be highly trained in anatomy and physiology of the human body and disease processes in order to understand the etiology, pathology, symptoms, signs, diagnostic studies, treatment modalities, and prognosis of diseases and procedures to be coded. This certificate can be earned completely online.

Students who complete this program will be able to:

PLO 1 - Apply principles of healthcare privacy, confidentiality, legal, ethical issues, and data security (HIPAA regulatory standards)

PLO 2 - Communicate both verbally and written form with others of the health care team in an effective, appropriate, and capable manner

PLO 3 - Demonstrate understanding of the etiology, pathology, symptoms, signs, diagnostic studies, treatment modalities, and prognosis of diseases and procedures to be coded

PLO 4 - Demonstrate knowledge of abstracting health records and assigning standardized codes to diagnoses and procedures to accurately meet reporting needs and processing claims for insurance reimbursement

PLO 5 - Demonstrate the organization, analysis, and evaluation of health record content for completeness and accuracy

Admission Information

Application and admission into the Health Information Management (online), AAS is required. Admission and application information is located at <https://www.lanecc.edu/programs-academics/areas-study/health-medical-and-fitness/health-information-management/health-information-management>

Program Requirements

Prerequisites

Prerequisites must be completed with a letter grade of C or better. P/NP is not accepted.

The following courses must be completed prior to applying for the Health Information Management program.

Writing (4 credits) - Complete one of the following:

- WR 115 - Introduction to College Composition 4 Credit(s)
- WR 115W - Introduction to College Writing: Workplace Emphasis 3 Credit(s)
- Any WR course higher than WR 115

Mathematics (4 credits) :

- MTH 060 - Beginning Algebra 4 Credit(s) or higher

Medical Terminology (3 credits):

- HP 100 - Medical Terminology 1 3 Credit(s)

Computer Literacy (4 credits) - Complete one of the following:

- CIS 101 - Computer Fundamentals 4 Credit(s)
- CS 120 - Concepts of Computing: Information Processing 4 Credit(s)

Human Body Systems (6 credits) - Complete both of the following:

- HP 150 - Human Body Systems 1 3 Credit(s)
- HP 152 - Human Body Systems 2 3 Credit(s)

Program Core Courses

Program Core courses must be completed with a letter grade of C or better. P/NP is not accepted.

- HIM 107 - Integrated Electronic Health Records 4 Credit(s)
- HIM 154 - Introduction to Disease Processes 4 Credit(s)
- HIM 222 - Reimbursement Methodologies 4 Credit(s)
- HIM 260 - Medical Record Auditing 4 Credit(s)
- HIM 270 - ICD-10 Coding 5 Credit(s)
- HIM 271 - ICD-10-PCS Coding 5 Credit(s)
- HIM 273 - CPT and HCPCS Coding 5 Credit(s)
- HP 110 - Health Office Procedures 3 Credit(s)
- HP 220 - Legal and Ethical Aspects of Healthcare 3 Credit(s)

Cooperative Education

Cooperative Education and Seminar must be completed with a letter grade of C or better. P/NP is not accepted. HIM 280 may be used to meet the Cooperative Education requirement.

- **Seminar (2 credits):**
 - COOP 206 - Co-op Ed: Internship Seminar
- **Cooperative Education (3 credits):**
 - HIT 280 - Co-op Ed: Health Records

Notes

- This program is fully contained in the Health Information Management (online), AAS degree.
- This program follows Career Pathway Certificate of Completion Requirements unless otherwise specified.
- Students can take all HIM Program courses prior to admission except COOP 206, HIM 222, HIM 270, HIM 271, HIM 273 and HIT 280.
- All program prerequisites with the subject prefix CIS, CS, and HP must be completed no more than five years prior to HIM program acceptance. The prerequisites with CIS, CS, and HP prefixes can possibly be waived with current work experience in an HIM related field.
- All program prerequisites can be completed online.
- Coding and Reimbursement classes (HIM 270, HIM 271, HIM 273, and HIM 222) must be completed within five years of the start of the governing catalog.
- Students who complete the Medical Coding (online), CPC may use the HIM coding sequence (HIM 270, HIM 271, HIM 273) plus one Computer Literacy course (CIS 101 or CS 120) to meet the HIM 114 - Introduction to Medical Coding requirement for the AAS: Health Information Management degree. See your Academic Advising team or Program Coordinator for more details about course substitutions and/or waivers.
- Completion of BI 231, BI 232, and BI 233 with a letter grade of C or better is an acceptable equivalent for HP 150 and HP 152.
- BT 120 - MS WORD for Business can be used to meet the Computer Literacy requirement if completed prior to Summer 2020 (when the program's prerequisites changed).
- Students who do not meet reading and/or math requirements may apply to PASS Lane Summer programming for alternative admission process. PASS Lane contact is Marcia Koenig (koenigm@lanecc.edu), Bldg. 11/244, 541-463-5818.
- Cooperative Education is required for students to earn their Medical Coding (online), CPC. Students must complete a minimum of 3 credit hours of on-the-job work experience related to their educational and career goals. Through Co-op, students connect theory and practice,

develop skills, expand career knowledge, and make professional contacts for the future. Work schedules and work sites vary. Students are required to be admitted into the HIM Program, complete a minimum of two thirds of their program coursework, have their coop requirements met, and have instructor approval prior to registering.

Human Services: Addiction Studies, CPC

Length: 24 credits

Program Contacts

- Offered by the Social Science Division
- Program Coordinator: Susan Shipp, shipp@lanecc.edu, 541-463-5231
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu
- Cooperative Education: <https://www.lanecc.edu/programs-academics/internships-cooperative-education>

Estimated Cost: \$4,369

- Resident Tuition: \$3,180*
- Technology Fee: \$312
- General Student Fees: \$407**
- Online Course Fee: \$20 (if applicable)
- Books/Course Materials: \$450 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

This program is designed for students who are interested in career enhancement and certification in addiction counseling. Students completing this Career Pathway Certificate fulfill the 150 hours of drug and alcohol education required by the Mental Health and Addiction Certification Board of Oregon (MHACBO) for a CADC I (Certified Alcohol Drug Counselor). State certification also requires successfully completing 1000 hours of supervised practice and a written exam. State certification requires a statement of recovery from individuals in recovery from a Substance Use Disorder; a Letter of Recovery Verification is needed for the CADC application. Many internship placements and employment settings also have a two-year requirement. Three credits of HS 280 - Cooperative Education: Human Services may apply toward the supervised hours requirement.

Students who complete this program will be able to:

- PLO 1 - Practice professional and ethical standards inherent in the human services field
- PLO 2 - Utilize skills of attending behavior, active listening, effective questioning techniques that align with theoretical orientations in the helping fields, while working with both individuals and groups
- PLO 3 - Exhibit competence in working with people from diverse backgrounds
- PLO 4 - Conduct various assessments with regard to eligibility, service needs and problem resolution, commonly used in the human services field
- PLO 5 - Develop a plan of action for clients using a strengths-based approach to link people with community resources
- PLO 6 - Utilize technology and digital resources for educational and career purposes
- PLO 7 - Exhibit and apply knowledge of substances of abuse, the process of addiction, prevention and treatment

Program Requirements

Program Core Courses

Program Core courses must be completed with a letter grade of C- or better. P/NP is not accepted. HS 150 - Personal Effectiveness for Human Service Workers is required, and HS 226 - Ethics and Law is recommended, prior to enrollment in Cooperative Education.

- HS 102 - Psychopharmacology 4 Credit(s)
- HS 150 - Personal Effectiveness for Human Service Workers 3 Cr
- HS 155 - Interviewing Theory and Techniques 3 Credit(s)
- HS 224 - Group Counseling Skills 3 Credit(s)
- HS 226 - Ethics and Law 3 Credit(s)
- HS 228 - HIV/AIDS and other Infectious Diseases: Risk Assessment and Intervention 2 Credit(s)
- HS 266 - Case Management 3 Credit(s)

Cooperative Education (3 credits):

- HS 280AS - Cooperative Education: Human Services - Addiction Studies

Notes

- This program follows Career Pathway Certificate of Completion Requirements unless otherwise specified.
- This program is fully contained in the Human Services, AAS degree.
- HS 155 - Interviewing Theory and Techniques *must* be completed prior to enrollment in HS 266, and is recommended prior to enrollment in HS 224.
- HS 150 - Personal Effectiveness for Human Service Workers must be completed prior to enrollment in Cooperative Education. HS 226 - Ethics and Law is recommended prior to enrollment in Cooperative Education.
- Cooperative Education: Students are required to attend a co-op orientation prior to beginning their field placement. Contact the Human Services Cooperative Education Coordinator. Co-op Office: coop-office@lanecc.edu (541) 463-5203.

Industrial Mechanics and Maintenance Technology Apprenticeship: Trade Worker Apprenticeship Technologies, CPC

Length: 15 credits

Program Contacts

- Offered by Advanced Technology
- Program Coordinator: Joy Crump, crumpj@lanecc.edu, 541-463-5496
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Estimated Cost: \$2,964

- Resident Tuition: \$1,988*
- Technology Fees: \$195
- General Student Fees: \$407**
- Books / Course Materials: \$375 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>.

* Resident tuition is based on all program requirements (general education, core, directed electives). Any prerequisites required prior to the entry of the program will be listed separately.

** General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to provide a structured system of training to prepare students with the foundational skills and knowledge required to enter the maintenance millwright trade.

Students who complete this program will be able to:

PLO 1 - Repair, install, and maintain a variety of building construction projects using trade specific tools and techniques in compliance with building codes and OSHA regulations

Admission Information

Students must be registered apprentices with the State of Oregon Bureau of Labor and Industries and accepted by a Joint Apprenticeship Training Committee. Information is available at boli.state.or.us.

Program Requirements

Program Core Courses (15 credits)

Complete all courses listed in the following trade. Program Core courses must be completed with a letter grade of C or better. P/NP is not accepted.

Maintenance Millwright

- APR 150 - The Millwright and Shop Safety 5 Credit(s)
- APR 151 - Millwright Machine Theory and Trade Calculations 5 Credit(s)
- APR 152 - Millwright: Power Transmissions and Boilers-Steam 5 Credit(s)

Notes

- This program follows the Career Pathway Certificate of Completion Requirements unless otherwise specified.
- This program is fully contained in the Industrial Mechanics and Maintenance Technology Apprenticeship, AAS

Manufacturing Technician 1, CPC

Length: 18 credits

Program Contacts

- Offered by: Advanced Technology
- Program Coordinator: Wendy Milbrat, milbratw@lanecc.edu, 541-463-5710
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Estimated Cost: \$4,102

- Resident Tuition: \$2,385*
- Technology Fees: \$234
- General Student Fees: \$271**
- Online Course Fee: (if applicable)
- Books / Course Materials: \$66 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$306 (Course fees / materials)
- Other Cost / Expenses: \$25*** (Instruments / tools)
- Differential Fees: \$815****

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

** General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this certificate is to prepare students for an entry-level manufacturing position. The skills provided will prepare the student for successful advancement through on-the-job training.

Students who complete this program will be able to:

- PLO 1 - Operate safely in a manufacturing environment
- PLO 2 - Use precision measuring tools effectively
- PLO 3 - Read prints and apply mathematical skills to accomplish shop tasks
- PLO 4 - Use the bandsaw, mill and lathe, both manual and CNC with entry-level skill

Program Requirements

Program Core Courses

Program Core courses must be completed with a letter grade of C- or better. P/NP is not accepted. It is recommended students complete math and computer science prior to registering for CNC 101. Enrollment in MFG and CNC courses by consent only. See your Academic Advisor or Program Coordinator about enrollment.

- CNC 101 - CNC Concepts 3 Credit(s)
- MFG 101 - Safety and Basic Shop Practice 3 Credit(s)
- MFG 102 - Shop Measurement and Coordinate System 3 Credit(s)
- MFG 103 - Metal Cutting Basics 3 Credit(s)
- MFG 151 - Manufacturing 1 6 Credit(s)

Notes

- The program follows the Career Pathway Certificate of Completion Requirements unless otherwise specified
- A high school diploma or equivalent is recommended for all applicants to this program.

Manufacturing Technician 2, CPC

Length: 36 credits

Program Contacts

- Offered by: Advanced Technology
- Program Coordinator: Wendy Milbrat, milbratw@lanecc.edu, 541-463-5710
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Estimated Cost: \$8,020

- Resident Tuition: \$4,770*
- Technology Fees: \$468
- General Student Fees: \$407**
- Online Course Fee: (if applicable)
- Books / Course Materials: \$66 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$612 (Course Fees / Materials)
- Other Cost / Expenses: \$50*** (Instruments / Tools)
- Differential Fees: \$1,647****

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to prepare the student for a semi-skilled manual or CNC manufacturing position. The skills provided will prepare the student for successful advancement through on the job training.

Students who complete this program will be able to:

- PLO 1 - Operate safely in a manufacturing environment
- PLO 2 - Use precision measuring tools effectively
- PLO 3 - Read prints and apply the mathematical skills to accomplish tasks
- PLO 4 - Safely and effectively use most manual shop machinery
- PLO 5 - Describe major concepts associated with the setup and operation of CNC equipment and integrate that basic knowledge in guided projects

Program Core Courses

Program Core courses must be completed with a letter grade of C- or better. P/NP is not accepted. It is recommended students complete math and computer science prior to registering for CNC 101. Enrollment in MFG and CNC courses by consent only. See your Academic Advisor or Program Coordinator about enrollment.

- CNC 101 - CNC Concepts 3 Credit(s)
- CNC 102 - CNC Setup and Operation 3 Credit(s)
- CNC 103 - CNC Programming 3 Credit(s)
- CNC 108 - CNC Projects 3 Credit(s)
- MFG 101 - Safety and Basic Shop Practice 3 Credit(s)
- MFG 102 - Shop Measurement and Coordinate System 3 Credit(s)
- MFG 103 - Metal Cutting Basics 3 Credit(s)
- MFG 151 - Manufacturing 1 6 Credit(s)
- MFG 152 - Manufacturing 2 4 Credit(s)
- MFG 153 - Manufacturing 3 5 Credit(s)

Notes

- The program follows the Career Pathway Certificate of Completion Requirements unless otherwise specified.
- A high school diploma or equivalent is recommended for all applicants to this program.

Music Technology and Sound Engineering: MIDI and Audio Production, CPC

Length: 39 credits

- Offered by the Arts and Humanities Division
- Program Coordinators: Seth Mulvihill, mulvihills@lanecc.edu, 541-463-5184
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Estimated Cost: \$ 7,339

- Resident Tuition: \$ 5,168*
- Technology Fees: \$ 507
- General Student Fees: \$ 407**
- Online Course Fees: \$ 30
- Books / Materials: \$ 300 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$ 928 (Music, Music Tech and Individual Music Lessons Fees)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

This program builds upon MIDI Production foundations with training in audio recording and editing software, hardware and techniques, including advanced audio production concepts such as creating audio for video, microphone techniques.

Students who complete this program will be able to:

- PLO 1 - Utilize MIDI networks and MIDI sequencers
- PLO 2 - Utilize software and hardware for recording, editing, and processing music and audio for commercial and artistic purposes
- PLO 3 - Communicate using technical vocabulary associated with MIDI, audio, and synthesis of sound
- PLO 4 - Select appropriate microphones, preamplifiers, and other outboard signal processors for various recording techniques and microphone placement
- PLO 5 - Analyze audio recordings in terms of frequency, stereo field, phase cancellation, and dynamic range
- PLO 6 - Engineer and produce high quality recording sessions for music, advertising, voiceovers, video and film soundtracks, and other types of projects
- PLO 7 - Do creative work through working with deadlines and scheduling time with clients and artists
- PLO 8 - Apply basic music theory and keyboard skills when working in a DAW

Program Requirements

Program Core Courses

Program Core courses must be completed with a letter grade of C- or better. P/NP not accepted.

Music Fundamentals (5 credits) - Complete both of the following:

- MUS 101 - Music Fundamentals 3 Credit(s)
- MUS 131 - Group Piano 2 Credit(s)

Music Core (8 credits) - Complete all of the following:

- MUS 111 - Music Theory 1 (First Term) 4 Credit(s)
- MUS 114 - Sight-reading and Ear Training (First Term) 2 Credit(s)
- MUS 127 - Keyboard Skills 1 (First Term) 2 Credit(s)

MIDI / Audio Engineering (23 credits) - Complete all of the following:

- AUD 120 - Audio Production 4 Credit(s)
- MUS 118 - Music Technology MIDI/Audio 1 4 Credit(s)
(MUS 118 must be completed prior to enrollment in MUS 119 & MUS 107)
- MUS 119 - Music Technology MIDI/Audio 2 4 Credit(s)
(MUS 119 must be completed prior to, or concurrently with MUS 107)
- MUS 107 - Audio Engineering 1 3 Credit(s) *Fall
(MUS 107 must be completed prior to enrollment in MUS 109)
- MUS 109 - Audio Engineering 2 4 Credit(s) *Winter
(MUS 109 must be completed prior to enrollment in MUS 110)
- MUS 110 - Audio Engineering 3 4 Credit(s) *Spring

Individual Lessons (1 credit) - Complete any MUP 100 course:

- MUP 100 - Individual Lessons 1 Credit(s)

Ensemble

Ensemble courses must be completed with a grade of C- or better, or Pass.

Ensemble (2 credits) - Complete one of the following:

- MUS 291 - Chamber Choir 2 Credit(s)
- MUS 293 - Jazz Combos 2 Credit(s)
- MUS 294 - Jazz Ensemble 2 Credit(s)
- MUS 295 - Symphonic Band 2 Credit(s)
- MUS 297 - Concert Choir 2 Credit(s)

Notes

- This program follows Career Pathway Certificate of Completion Requirements unless otherwise specified.
- This program is fully contained in the Music Technology and Sound Engineering, AAS degree.
- A Music Theory Placement exam is required to get into MUS 111. Email artshumanities-office@lanecc.edu for information.

- MUS 107 and MUS 109 must be completed with a grade of C- or better to advance to the next course in the sequence.

Music Technology and Sound Engineering: MIDI Production, CPC

Length: 20 credits

- Offered by the Arts and Humanities Division
- Program Coordinators: Seth Mulvihill, mulvihills@lanecc.edu, 541-463-5184
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Estimated Cost: \$4,421

- Resident Tuition: \$ 2,650*
- Technology Fees \$ 260
- General Student Fees: \$ 407**
- Online Course Fees: \$ 30
- Books / Materials: \$ 300 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$ 774 (Music, Music Tech and Individual Music Lessons Fees)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to develop familiarity with MIDI software, MIDI hardware, and foundations of music production including basic audio production concepts such as file management, mixing, and basic recording.

Students who complete this program will be able to:

- PLO 1 - Utilize MIDI networks and MIDI sequencers
- PLO 2 - Utilize software and hardware for recording, editing, and processing music and audio for commercial and artistic purposes
- PLO 3 - Communicate using technical vocabulary associated with MIDI, audio, and synthesis of sound
- PLO 4 - Use a variety of synthesizers, virtual instruments, and keyboards with digital audio workstations (DAW)
- PLO 5 - Apply basic keyboard skills when working in a DAW

Program Requirements

Program Core Courses

Program Core courses must be completed with a grade of C- or better. P/NP not accepted.

- AUD 120 - Audio Production 4 Credit(s)
- MUS 101 - Music Fundamentals 3 Credit(s)
- MUS 118 - Music Technology MIDI/Audio 1 4 Credit(s)
- MUS 119 - Music Technology MIDI/Audio 2 4 Credit(s)
- MUS 131 - Group Piano 2 Credit(s)

Individual Lessons (1 credit) - Complete any MUP 100 course:

- MUP 100 - Individual Lessons 1 Credit(s)

Ensemble

Ensemble must be completed with a grade of C- or better, or Pass.

Ensemble (2 credits) - Complete one of the following:

- MUS 291 - Chamber Choir 2 Credit(s)

- MUS 293 - Jazz Combos 2 Credit(s)
- MUS 294 - Jazz Ensemble 2 Credit(s)
- MUS 295 - Symphonic Band 2 Credit(s)
- MUS 297 - Concert Choir 2 Credit(s)

Notes

- This program follows the Career Pathway Certificate of Completion Requirements unless otherwise specified.
- This program is fully contained in the Music Technology and Sound Engineering, AAS degree.

Paramedicine: Emergency Medical Technician, CPC

Length: Program 12 credits

Program Contacts

- Offered by Health Professions
- Program Coordinator: Kris Siewert, siewertk@lanecc.edu, 541-463-3297
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu
- Cooperative Education: <https://www.lanecc.edu/programs-academics/internships-cooperative-education>

Estimated Cost: \$5,619

- Resident Tuition: \$1,590*
- Technology Fees: \$156
- General Student Fees: \$136**
- One Time Student Fee: \$30
- Online Course Fee: \$80 (if applicable)
- Books / Course Materials: \$200 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$2,162 (lab/program application fees, EMT & Paramedic licensure/exams, background check/fingerprinting, medical requirements, American DataBank)
- Other Cost / Expenses: \$850*** (instrument/tools, uniform/boots, computer)
- Differential Fees: \$415****

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives). Any prerequisites required prior to the entry of the program will be listed separately.

** General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to prepare students for occupations as an Emergency Medical Technician. This program is a nationally recognized licensure that a student would be able to utilize in most of the United States.

Students who complete this program will be able to:

- PLO 1 - Sit for their National Registry of EMTs cognitive exam
- PLO 2 - Work on an ambulance
- PLO 3 - Work as either paid or professional in a fire department
- PLO 4 - Work on wildland fires as Emergency Medical support
- PLO 5 - Work in an Emergency Room

Admission Information

Students are encouraged to consult the Academic Advising Team (EMSPProgram@lanecc.edu) before applying for admission. Program application

and information about the point allocation system are available at <https://www.lanecc.edu/hp/emt>.

Program Requirements

Program Core Courses

Program Core courses must be completed with a grade of C- or better, or Pass.

- EMS 111 - Emergency Medical Technician 8 Credit(s)
- EMS 112 - Emergency Medical Technician Lab 3 Credit(s)
- EMS 113 - Emergency Medical Technician Clinical 1 Credit(s)

Notes

- This program follows Career Pathway Certificate of Completion Requirements unless otherwise specified.
- This program is fully contained in the Paramedicine, AAS degree.

Accreditation

The Emergency Medical Technician Program is nationally accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP).

Licensing and Certification

- National Certification: National Registry of Emergency Medical Technicians - Emergency Medical Technician (NREMT)
- State licensure: Oregon Health Authority, EMS & Trauma- Emergency Medical Technicians (EMT)

Welding Processes: Shielded Metal Arc Welder, CPC

Length: 15 credits

Program Contacts

- Offered by: Advanced Technology
- Program Coordinator: Doug Ford, forddo@lanecc.edu, 541-463-5498
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Estimated Cost: \$3,051

- Resident Tuition: \$1,988*
- Technology Fees: \$195
- General Student Fees: \$136**
- Online Course Fee: (if applicable)
- Books / Course Materials: \$71 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$663

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/costs-admission/tuition-fees-and-payments/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

** General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to prepare graduates for employment for entry-level positions in the metal fabrication industry.

Students who complete this program will be able to:

- PLO 1 - Demonstrate proficiency at an industry entry-level with Shielded Metal Arc Welding
- PLO 2 - Weld and cut metal as is typical of circumstances found in industrial environments
- PLO 3 - Demonstrate and use industry safety standards

Program Requirements

Program Core Courses

WLD courses must be completed with a letter grade of C- or better. P/NP is not accepted. MFG and MTH courses must be completed with a grade of C- or better, or Pass. **Take the maximum number of credits listed for WLD courses.**

Welding Core - 3 courses:

Complete WLD 121, WLD 122 and either WLD 141 or 140.

- WLD 121 - Shielded Metal Arc Welding 1 (stick welding) 1-4 Credit(s)
- WLD 122 - Shielded Metal Arc Welding 2 (stick welding) 1-4 Credit(s)
One Welder Qualification (CERT) course from the following:
- WLD 141 - Welder Qualification (Cert): SMAW 3 Credit(s)
- WLD 140 - Welder Qualification (Cert): Wire Drive Processes 3 Credit(s)

Geometry - 1 course:

One geometry course from the following:

- MTH 085 - Applied Geometry for Technicians 4 Credit(s)
- MTH 097 - Geometry 4 Credit(s)
- MTH 112 - Trigonometry 5 Credit(s)

NOTE: WLD 111 may be substituted for the geometry requirement.

Notes

- This program is fully contained in the Welding Processes, 1-yr Certificate
- This program follows Career Pathway Certificate of Completion Requirements unless otherwise specified.
- A high school diploma or equivalent is recommended for all applicants to this program.
- Students may be able to substitute an alternative welding course. Please see an Academic Advisor to arrange pre-approved substitutions.
- AAS: Fabrication / Welding Technology students will be awarded this Pathway upon completion of degree.

Welding Processes: Wire Drive Welder, CPC

Length: 15 credits

Program Contacts

- Offered by: Advanced Technology
- Program Coordinator: Doug Ford, forddo@lanecc.edu, 541-463-5498
- Academic Advising: <https://www.lanecc.edu/get-support/academic-support/academic-advising/connect-advising>; 541-463-3800; academicadvising@lanecc.edu

Estimated Cost: \$3,154

- Resident Tuition: \$1,988*
- Technology Fees: \$195
- General Student Fees: \$136**
- Online Course Fee: (If applicable)
- Books / Course Materials: \$106 (Some courses use Open Educational Resources (OER), which are free or low-cost materials.)
- Program Specific Fees: \$730 (Course fees)

Costs provided are estimates only. Learn more and view current tuition and fee information at <https://www.lanecc.edu/esfs/credit-tuition>

* Resident tuition is based on all program requirements (general education, core, directed electives).

**General Student fees are paid once each term, depending on whether you are taking classes on Main Campus, or at one of the outreach centers or by distance learning.

*** Any special info about program costs or expenses.

**** This is the total of all the differential fees attached to the courses in this program.

Program Learning Outcomes

The purpose of this program is to prepare graduates for employment for entry-level positions in the metal fabrication industry.

Students who complete this program will be able to:

PLO 1 - Demonstrate proficiency at an industry entry-level with various wire drive processes

PLO 2 - Weld and cut metal as is typical of circumstances found in industrial environments

PLO 3 - Demonstrate and use industry safety standards

Program Requirements

Program Core Courses

WLD courses must be completed with a letter grade of C- or better. P/NP is not accepted. MFG and MTH courses must be completed with a grade of C- or better, or Pass. **Take the maximum number of credits listed for WLD courses.**

Welding Core - 3 courses:

Complete WLD 143, WLD 154 and either WLD 140 or 141.

- WLD 143 - Wire Drive Welding 1 1-4 Credit(s)
- WLD 154 - Wire Drive Welding 2 1-4 Credit(s)
One Welder Qualification (CERT) course from the following (3 credits):
- WLD 140 - Welder Qualification (Cert): Wire Drive Processes or
- WLD 141 - Welder Qualification (Cert): SMAW

Geometry - 1 course:

One geometry course from the following:

- MTH 085 - Applied Geometry for Technicians 4 Credit(s)
- MTH 097 - Geometry 4 Credit(s)
- MTH 112 - Trigonometry 5 Credit(s)

NOTE: WLD 111 may be substituted for the geometry requirement.

Notes

- This program is fully contained in the Welding Processes, 1-yr Certificate.
- This program follows Career Pathway Certificate of Completion Requirements unless otherwise specified.
- A high school diploma or equivalent is recommended for all applicants to this program.
- Students may be able to substitute an alternative welding course. Please see an Academic Advisor to arrange pre-approved substitutions.
- AAS: Fabrication / Welding Technology students will be awarded this Pathway upon completion of degree.

Non-Credit Programs

English as a Second Language (Community)

Length: Depends on placement level

Program Contacts

- Offered by: ESL Department
- Program Coordinator: Leilani Perez, 541-463-3403, perezl@lanecc.edu
- Student Services Team: 541-463-5253, eslstudentservices@lanecc.edu
- Academic Advising Team: internationaladvisor@lanecc.edu

Fees and program cost

- U.S. - Fees may change during the year. Learn more and view updated information at <https://www.lanecc.edu/programs-academics/english-second-language/fees-and-charges>
- International - Fees may change during the year. Learn more and view updated information at <https://www.lanecc.edu/programs-academics/international-programs/prospective-international-students/cost-attendance>

Admission Information

The Community English Program (CEP) at Lane Community College offers 6 levels of English as a Second language study that range from true beginning through high intermediate proficiency level. These classes combine the language skills of reading, writing, listening, and speaking. All new students should complete the ESL Intake Form and take a placement test, which can be located at <https://www.lanecc.edu/programs-academics/english-second-language/evening-program-community-esl-overview>

Courses

Level 0

- ESL XESC 05160 - ESL Combined Skills Level 0

Level 1

- ESL XESC 05161 - ESL Combined Skills Level 1
- ESL XESL 05161 - ESL Grammar & Literacy Level 1

Level 2

- ESL XESC 05162 - ESL Combined Skills Level 2

Level 3

- ESL XESC 05163 - ESL Combined Skills Level 3

Level 4

- ESL XESC 05164 - ESL Combined Skills Level 4

Level 5

- ESL XESC 05165 - ESL Combined Skills Level 5

Level 6

- ESL XESC 05166 - ESL Combined Skills Level 6

English as a Second Language (Intensive)

Length: Depends on placement level

Program Contacts

- Offered by: ESL Department
- Program Coordinator: Leilani Perez, 541-463-3403, perezl@lanecc.edu
- Student Services Team: 541-463-5253, eslstudentservices@lanecc.edu
- Academic Advising Team: internationaladvisor@lanecc.edu

Fees and program cost

- U.S. - Fees may change during the year. Learn more and view updated information at <https://www.lanecc.edu/programs-academics/english-second-language/fees-and-charges>
- International - Fees may change during the year. Learn more and view updated information at <https://www.lanecc.edu/programs-academics/international-programs/prospective-international-students/cost-attendance>

Program Learning Outcomes

The purpose of this program is to assist English language learners, both resident and international students, to achieve educational, workplace or other personal goals by facilitating English language learning and intercultural understanding in a supportive, respectful environment.

Admission Information

The Intensive ESL (IESL) Program at Lane Community College offers 6 levels of English as a Second language study that range from true beginning through college transition. All new students should complete the ESL Intake Form and then take a placement test to be placed in an appropriate class level. For more information, go to <https://www.lanecc.edu/programs-academics/english-second-language/daytime-program-intensive-esl>.

ESL to Credit Bridge Program: For students interested in completing ESL coursework simultaneously with credit courses, contact the department or view the Bridge Program information at <https://www.lanecc.edu/programs-academics/english-second-language/esl-credit-bridge-program>.

Courses

There are 6 levels in the IESL program (A, B, C, D, E, and F).

Level A

- ESL XESC 0516A - ESL Basic Combined Skills Level A
- ESL XESR 0516A - ESL Reading and Oral Skills Level A

Level B

- ESL XESC 0516B - ESL Combined Skills Level B
- ESL XESR 0516B - ESL Reading and Oral Skills Level B
- ESL XESW 0516B - ESL Writing and Grammar Level B

Level C

- ESL XESR 0516C - ESL Reading and Oral Skills Level C
- ESL XESW 0516C - ESL Writing and Grammar Level C

Level D

- ESL XESR 0516D - ESL Reading and Oral Skills Level D
- ESL XESW 0516D - ESL Writing and Grammar Level D

Level E

- ESL XEBO 0516E - ESL Bridge Oral Skills Level E
- ESL XEBW 0516E - ESL Bridge Reading and Writing Level E
- ESL XESR 0516E - ESL - Academic Reading Level E
- ESL XESS 0516E - ESL Academic Listening and Speaking Level E
- ESL XESW 0516E - ESL Academic Writing and Grammar Level E

Level F

- ESL XEBO 0516F - ESL Bridge Oral Skills Level F
- ESL XESS 0516F - ESL College Transition Writing and Grammar Level F
- ESL XESR 0516F - ESL College Transition Reading Level F
- ESL XEBW 0516F - ESL Bridge Reading and Writing Level F
- ESL XESW 0516F - ESL College Transition Writing and Grammar Level F

Elective

- ESL XESS 05160 - English Pronunciation

Non-Credit Training Certificates

An NCTC is a form of recognition awarded by a community college made up of a single or series of courses that **do not offer college credit for completion**. These are short-term programs that provide skills training in response to regional occupational needs.

Environmental Services Aide

In this self-paced, online course, using information provided by the Centers for Disease Control (CDC), the American Hospital Association (AHA) and other organizations, students will gain entry-level knowledge to seek employment in a healthcare facility or hospital and, upon completion, will be awarded a non-credit training certificate to add to your skillset when applying for employment in this field.

- For more information, please visit: <https://www.lanecc.edu/programs-academics/areas-study/health-medical-and-fitness/environmental-services-aide>

Phlebotomy

The primary responsibility of a phlebotomist is to draw blood specimens from patients for laboratory tests. The job includes establishing a professional relationship with the patient, selecting and preparing the puncture site, collecting specimens, preparing and maintaining equipment, and caring for the patient after specimen collection. Other duties include entering data into a computer and performing clerical duties associated with lab test record keeping.

The training consists of two terms of noncredit lecture/lab courses. Upon successful completion of both terms, the student will have the necessary skills to seek employment. Once employed full-time (35 hours a week) for one year, they will meet the Route 3 eligibility requirements set by the American Society of Clinical Pathology (ASCP) to qualify to take the national Phlebotomy Technician PBT certification exam at additional cost. Certification is not currently required to work as a phlebotomist in Oregon. Students must take both terms for successful completion of the course.

- For more information, please visit: <https://inside.lanecc.edu/ce/phlebotomy>

Project Management

Lane's Project Management training is designed to be flexible, convenient, and affordable. All our trainings are held virtually, saving you valuable time and money. Even though your classes are all online, they're taught live, so you'll get many opportunities to interact with your instructors. Whether you're interested in just taking one specific class or enrolling in the complete Project Management

noncredit Certificate Bundle, our training is flexible enough to fit into your schedule. Trainings begin in spring and fall terms, and the seven course bundle can be completed in about six months.

- For more information, please visit: <https://www.lanec.edu/programs-academics/areas-study/business-and-office-professionals/project-management>

Non-Degree Transfer Options

If you are interested in transferring, be sure to work with an academic advisor on the best option for you.

Core Transfer Map (CTM)

The Core Transfer Map (CTM) is a group of eight classes that add up to at least 30 credits. When the full set of eight courses are successfully completed at an Oregon community college, they are guaranteed to transfer as a block to any Oregon public university, and they will count toward that university's core bachelor's degree requirements. The CTM will be noted on a student's transcript upon completion of the requirements and at the request of the student. Students may take classes that fit these categories at any Oregon community college, and all classes transfer to meet at least 30 credits of general education requirements for a bachelor's degree at any Oregon public University.

Note that students interested in a specific major should consult with an Academic Advisor of that area when picking their specific Core Transfer Map classes. This will help keep you on track for credits towards your 4-year degree completion, by helping you select Core Transfer Map classes that can also fulfill lower-division requirements in your major.

If you believe that you have completed the requirements for the Core Transfer Map, and would like the CTM noted on your transcript please send an email with your request to degreeevaluators@lanec.edu

Required Courses

Subject	General Pathway	STEM Pathway
Writing	WR 121	WR 121
Arts and Letters	2 courses chosen from the AAOT General Education Arts and Letters list (6-8 credits)	2 courses chosen from the AAOT General Education Arts and Letters list (6-8 credits)
Social Sciences	2 courses chosen from the AAOT General Education Social Science list (6-8 credits)	2 courses chosen from the AAOT General Education Social Science list (6-8 credits)
Natural Science	2 Lab Science courses chosen from the AAOT General Education Science/Math/Computer Science with Labs list (8-10 credits; lab science courses ONLY)	2 Lab Science courses chosen from the AAOT General Education Science/Math/Computer Science with Labs list (8-10 credits; lab science courses ONLY. Note that science courses for non-majors do not qualify)
Math	1 course (4-5 credits); any 100-level or 200-level MTH course for which MTH 095 or MTH 098 is a prerequisite. See course listing for MTH options.	1 course (4-5 credits); any 100-level or 200-level MTH course for which MTH 095 or MTH 098 is a prerequisite. See course listing for MTH options.

Additional Requirements

Subject	General Pathway	STEM Pathway
Cultural Literacy	Students must select one course from any of the discipline studies that is designated as meeting the	Students must select one course from any of the discipline studies that is designated as meeting the statewide criteria for Cultural

	statewide criteria for Cultural Literacy, as indicated by ^{CL} on the AAOT General Education lists. This course can be one of the 6 required courses in Arts and Letters, Social Sciences, or Natural Sciences.	Literacy, as indicated by ^{CL} on the AAOT General Education lists. This course can be one of the 6 required courses in Arts and Letters, Social Sciences, or Natural Sciences.
At Least 30 Total Credits	If the credit total for the above requirements is less than 30 credits, select a course of your choice from any of the AAOT General Education lists.	If the credit total for the above requirements is less than 30 credits, select a course of your choice from any of the AAOT General Education lists.
Completion Standards	All courses must be completed with a grade of "C-" or "P" or better. Students must have a cumulative GPA of at least 2.0 in the Foundational Curriculum courses at the time of completion.	All courses must be completed with a grade of "C-" or "P" or better. Students must have a cumulative GPA of at least 2.0 in the Foundational Curriculum courses at the time of completion.

Oregon Transfer Module

The OTM is a state-approved Transcription Notation, not a degree or certificate

For students intending to transfer within a year to a public university in Oregon, this transcript notation ensures the 45 credits of specific general education requirements and electives will be accepted at any state institution and ensures sophomore status for registration purposes. Upon transfer, the receiving institution may specify additional course work required for a major or for degree requirements or to make up the difference between the Transfer Module and the institution's total General Education requirements.

Any student holding an Oregon Transfer Module that conforms to the guidelines below will have met the requirements for the Transfer Module at any Oregon community college or public institution.

Oregon Transfer Module credits also may not match program requirements in the receiving school. Students are encouraged to meet with an academic advisor for planning their courses. The Oregon Transfer Module includes 45 credits of course work, equivalent to 3 academic quarters.

For current Lane courses that meet OTM requirements, see: Approved Discipline Studies Courses for Associate Degrees and Oregon Transfer Module

Guidelines

- Complete a total of 45 credits of college-level coursework (see notes).
- Complete at least 24 credits at Lane.
- All courses must be a minimum of 3 credits.
- All courses must be completed with a letter grade of "C-" or better. P/NP is not accepted.
- Cumulative GPA must be at least 2.0 at the time the Oregon Transfer Module is notated.

Foundational Skills

Writing

Complete two courses:

- WR 121_H / WR 121 - Academic Composition 4 Credit(s)
- And complete one of the following:
 - WR 122_H / WR 122 - Argument, Research and Multimodal Composition 4 Credit(s) or
 - WR 123 - Composition: Research Writing 4 Credit(s) or
 - WR 227_H / WR 227 - Technical Writing 4 Credit(s)

Oral Communications

Complete one course from the Oral Communication list.

Mathematics

Complete one course in college-level mathematics:

- MTH 105 - Math in Society 4 Credit(s)
- MTH 106 - Math in Society 2 4 Credit(s)
- MTH 107 - Math in Society 3 4 Credit(s)
- MTH 111 - College Algebra 5 Credit(s)
- MTH 112 - Trigonometry 5 Credit(s)
- Any 200-level mathematics course

Discipline Studies

Arts and Letters

Complete three courses from the Arts and Letters list.

Social Sciences

Complete three courses from the Social Science list.

Science/Math/Computer Science

Complete three courses, including at least one laboratory course in Biological or Physical science, from the Science/Math/Computer Science list.

Notes:

-Biology: 100-level Biology courses are not repeatable. Students may only use one BI 101, one BI 102, and one BI 103 to meet requirements for any Lane degree, regardless of letter option. Please contact academic advising for details.

-Chemistry: General Chemistry and Organic Chemistry series have separate lab courses. It is highly recommended students take lecture and lab courses together. To complete an AAOT Lab Science requirement, both lecture and lab courses must be completed.

-Computer Programming: Students who complete more than one CS 161 or CS 162 programming language course should be aware that transfer institutions may count multiple 161 or 162 courses as repeats, **and may not accept them in transfer**. Students wishing to complete multiple programming courses should first take a CS 161/162 series and then enroll in CS 133/233 course series for any subsequent programming languages.

Electives

To receive an Oregon Transfer Module transcript notation, students must complete all Foundational Skills and Discipline Studies requirements. Students must also complete enough elective coursework to total 45 credits. Elective courses must be completed from the approved Discipline Studies options:

- Arts and Letters
- Social Science
- Science/Math/Computer Science

Notes

1. Courses numbered 197, 198, 199, 280, 297, 298, or 299 count as electives and do not meet Foundational Skills or Discipline Studies requirements. Courses numbered 199 and 299 are experimental and may later be reviewed and approved to meet Discipline Studies requirements.
2. Foundational Skills are open to demonstration of proficiency. For information on waiver testing or credit for prior learning, contact an academic advisor. Waiver testing is not the same as placement testing.
3. 200-level second language courses count toward the Arts and Letters requirement. American Sign Language (ASL) is considered a second language.
4. University second language admission requirements for transfer students graduating high school 1997 or later include one of the following:
 - Two terms of the same college-level second language with an average grade of C- or above.
 - Two years of the same high school-level second language with an average grade of C- or above.
 - Satisfactory performance on an approved second language assessment of proficiency.
 - Demonstrated proficiency in American Sign Language meets second language admission requirements.
5. Credit-by-Exam and Credit-by-Assessment may comprise no more than 25% of total degree credits.
6. Repeatable courses may be used once to meet a Discipline Studies requirement. Any additional allowable repeats may be used to meet Elective requirements.

7. Some courses are included on more than one Discipline Studies list. These courses may be used only once to meet a specific Discipline Studies requirement. Please contact your academic advisor for details.
8. Lower-division college-level courses taken at Lane will not always meet the same requirements an upper-division college-level course with similar content does at a four-year transfer institution. In such cases, the course(s) in question will generally transfer as an elective. Please contact specific four-year schools for details.
9. Only the Academic Requirements Review Committee (ARRC) may waive a college-related instruction requirement. Petitions are available from Enrollment Services lanecc.edu/administration/enrollment-services/general-education-substitution-and-waiver-petition.

Course Types by Prefix

Types of Courses at Lane:

1. Career Technical Education (CTE) courses
2. Lower-Division Collegiate (LDC) courses
3. Support courses
4. Previously used course prefixes

1. Career Technical Education (CTE) courses

Policies on accepting career technical credits vary at the four-year colleges in Oregon. Consult an academic advisor about taking career technical courses as electives for transfer to a four-year institution.

- AM: Automotive
- AP: Aviation Pilot
- APR: Apprenticeship
- AS: Aerospace Science
- AUD: Audio Production
- AV: Aviation Maintenance
- BT: Business Technology
- CA: Culinary Arts
- CIS: Computer Information Systems
- CNC: Computer Numerical Control
- CST: Construction
- DA: Dental Assisting
- DH: Dental Hygiene
- DRF: Drafting
- DS: Diesel
- EMS: Emergency Medical Services
- ET: Electronic Technology
- FA: Film Arts (FA 221, FA 222, FA 250, FA 254, FA 256)
- FIRE: Wildland Fire Management
- FLS: Fitness and Lifestyle Specialist
- FT: Flight Technology
- GWE: General Work Experience
- HIM: Health Information Management
- HIT: Health/Medical Technology
- HP: Health Professions
- IDS: Interdisciplinary Studies
- MA: Medical Assistant
- MDP: Multimedia Production
- MFG: Manufacturing Technology
- MUL: Multimedia
- NRG: Energy Management
- NRS: Nursing
- OST: Occupational Skills Training
- PN: Practical Nursing
- PTA: Physical Therapist Assistant
- RTEC: Regional Technology Education Consortium
- UAS: Unmanned Aircraft Systems
- VP: Video Production

- WATR: Water Conservation
- WLD: Welding
- WST: Watershed Science Technician

2. Lower-Division Collegiate (LDC) courses

Courses numbered 100-299 are considered LDC courses, which are generally accepted as transfer courses.

- ASL: American Sign Language
- ANTH: Anthropology
- ARH: Art History
- ART: Art
- ASTR: Astronomy
- BA: Business Administration
- BI: Biology
- CG: Career Development/Human Relations and College Success
- CH: Chemistry
- CHN: Mandarin Chinese
- CINE: Cinema Studies
- CJA: Criminal Justice
- COMM: Communication
- COOP: Cooperative Education
- CRWR: Creative Writing
- CS: Computer Science
- CW: Chinuk Wawa
- D: Dance
- ECE: Early Childhood Education (was CTE prior to Summer 2021)
- ECON: Economics
- ED: Education
- EL: Effective Learning
- ENG: English
- ENGR: Engineering
- ENSC: Environmental Science
- ES: Ethnic Studies
- FA: Film Arts
- FL: Foreign Language
- FN: Food and Nutrition (was CTE prior to Summer 2021)
- FR: French
- G: Geology
- GEOG: Geography
- GIS: Geographic Information Science
- GS: General Science
- HE: Health
- HDFS: Human Development/Family Studies (was CTE prior to Summer 2021)
- HON: Honors
- HS: Human/Community Services (was CTE prior to Summer 2020)
- HST: History
- HUM: Humanities
- J: Journalism
- LIB: Library
- MTH: Mathematics
- MUP: Music Performance
- MUS: Music
- PE: Physical Education
- PEAT: Physical Education - Athletics
- PEO: Physical Education - Outdoor Education
- PH: Physics
- PHL: Philosophy
- PS: Political Science
- PSY: Psychology
- SLD: Student Leadership Development

- SOC: Sociology
- SOIL: Soil Science
- SPAN: Spanish
- TA: Theatre Arts
- WR: Writing
- WS: Women's Studies

3. Support courses

Courses below 100 are considered support skills or developmental and are generally not accepted for transfer to a university.

- ESL: English as a Second Language
- MTH: Mathematics (MTH 010-099)
- RD: Reading (RD 087)
- WR: Writing (WR 087, WR 093, WR 097)

4. Previously used prefixes

[^] indicates CTE

- AB: Auto Body[^]
- AIL: American Indian Language (replaced by CW)
- ALS: Academic Learning Skills
- AT: Advanced Technology[^]
- AVN: Avionics[^]
- APPR: Apprenticeship (now APR)[^]
- BOT: Botany (replaced by BI)
- BVDP: Broadcast/Video Production[^]
- CAS: Computer Application Software[^]
- CE: Continuing Education[^]
- CPSY: Counseling Psychology
- CSK: Career Skills Training[^]
- DDA: Dental Administrative Assistant[^]
- EET: Electronic Engineering Tech[^]
- ELT: Electronics[^] (replaced by ET)
- EMT: Emergency Medical Technician[^]
- ENV: Environmental Science
- EXMS: Exercise and Movement Science[^] (replaced by FLS)
- GD: Graphic Design[^]
- HI: Health Informatics (replaced by HIM)[^]
- HO: Health Occupations (replaced by HP)[^]
- HRTM: Hotel, Restaurant, Tourism Management[^]
- INTL: International[^]
- IT: Industrial Technology[^]
- JPN: Japanese
- LA: Legal Office Assistant[^]
- LAT: Landscape/Nursery Technology[^]
- LE: Law Enforcement[^]
- LGL: Legal Office[^]
- MS: Media Studies[^]
- NUR: Nursing (A, D, N)[^]
- PGS: Physics - General Science[^]
- PPPM: Public Policy and Management
- PST: Professional Skills Training
- RB: Radio[^]
- REL: Religion
- RE: Real Estate
- RH: Refrigeration[^]
- RT: Respiratory Care[^]
- RVS: Recreational Vehicle Service[^]
- SP: Speech (now COMM)
- SUST: Sustainability[^]
- TTL: Trans and Trucking Logistics[^]
- Z: Zoology (replaced by BI)

State General Education Learning Outcomes

Lane's general education courses and general education associate degree programs are aligned with the following outcomes, approved in 2010 by the state Joint Boards of Education. Additionally, many courses and programs are aligned with Lane's Institutional Learning Outcomes.

Arts and Letters

- Interpret and engage in the Arts and Letters, making use of the creative process to enrich the quality of life
- Critically analyze values and ethics within a range of human experience and expression to engage more fully in local and global issues

Cultural Literacy

- Identify and analyze complex practices, values, and beliefs and the culturally and historically defined meanings of difference

Information Literacy

- Formulate a problem statement.
- Determine the nature and extent of the information needed to address the problem
- Access relevant information effectively and efficiently
- Evaluate information and its source critically
- Understand many of the economic, legal and social issues surrounding the use of information

Mathematics

- Use appropriate mathematics to solve problems.
- Recognize which mathematical concepts are applicable to a scenario, apply appropriate mathematics and technology in its analysis, and then accurately interpret, validate, and communicate the results

Science and Computer Science

- Gather, comprehend, and communicate scientific and technical information in order to explore ideas, models and solutions and generate further questions
- Apply scientific and technical modes of inquiry, individually, and collaboratively, to critically evaluate existing or alternative explanations, solve problems, and make evidence-based decisions in an ethical manner
- Assess the strengths and weaknesses of scientific studies and critically examine the influence of scientific and technical knowledge on human society and the environment

Social Science

- Apply analytical skills to social phenomena in order to understand human behavior
- Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live

Speech/Oral Communication

- Engage in ethical communication processes that accomplish goals
- Respond to the needs of diverse audiences and contexts
- Build and manage relationships

Writing

- Read actively, think critically, and write purposefully and capably for academic and, in some cases, professional audiences
- Locate, evaluate, and ethically utilize information to communicate effectively
- Demonstrate appropriate reasoning in response to complex issues

Other Learning Opportunities

Academic Learning Skills

Main Campus, Building 11, Room 245, 541-463-5439, www.lanecc.edu/programs-academics/academic-departments/college-and-career-foundations/academic-learning-skills

Academic Learning Skills (ALS) offers courses to improve student success in general education, career technical, and transfer courses. Students who take courses offered by Academic Learning Skills gain confidence and abilities to be successful in their classes. Students improve their reading, writing, vocabulary, critical thinking, math, digital learning skills, and learning/study skills.

Credit courses: Academic Learning Skills offers courses for college credit in-person, hybrid, and online formats. For more information about courses, see the Writing, Mathematics, and Effective Learning headings in the course description section of this catalog.

Developmental credit: Most of the courses in Academic Learning Skills are considered developmental courses. Students may be eligible to receive financial aid to complete developmental courses. Please discuss the impacts of developmental coursework with financial aid and an academic advisor.

Adult Basic and Secondary Education

Main Campus, Building 11, Room 201, 541-463-5214; Downtown Campus, Room 404, 541-463-6180, www.lanecc.edu/programs-academics/academic-departments/college-and-career-foundations/adult-basic-and-secondary-education

College and GED preparation: Looking to prepare for college, complete your GED, and/or build skills for a better job? We have you covered!

We are a tuition-free, non-credit program designed to provide learning opportunities for students who want more from life. This program is a pathway for students to obtain a GED certificate, to enter or return to college, to build core academic and student success skills in preparation for college classes and training programs, to explore support services and degree options, and/or to increase employability.

We offer classes at multiple campuses and outreach sites throughout Lane County. Students can choose from a range of course levels and individualized or structured class options in reading, writing, and math. Class times are offered during the day and evening in many locations.

Many of the college's academic and student services are available to all students. Examples include Career and Employment Services, Counseling, Center for Accessible Resources, and the Multicultural Center.

College preparation and transition: These courses prepare learners who need to build or brush up on college readiness skills for postsecondary education, including math, reading, writing, and student success principles. Students learn how to successfully navigate the college system, explore career/degree options, and practice time/self-management while completing coursework aligned to credit-level programs.

GED preparation in English and Spanish: The GED is the national high school equivalency assessment operated by GED Testing Service and includes a set of four tests: Math, Reasoning through Language Arts, Science, and Social Studies. Our classes prepare students to successfully complete the GED for employment and/or college entry.

Preparación para el GED en inglés y español: El GED es la evaluación de equivalencia de escuela secundaria nacional operada por el Servicio de Pruebas del GED e incluye un conjunto de cuatro pruebas: Matemáticas, Razonamiento a través de Artes del Lenguaje, Ciencias y Estudios Sociales. Nuestras clases preparan a los estudiantes para completar con éxito el GED para el empleo y / o la entrada a la universidad.

Admission requirements: All students must be 18 years of age or older, have a referral from the local public school district if 16 or 17 years of age, or have homeschool release and verification of current homeschool registration from ESD. (This applies to in-school and out-of-school youth. The decision to release a student is made by local school district officials in accordance with Oregon Revised Statutes and local school district policy). All new students must attend an orientation session.

Admission procedures: Class locations, orientation, and registration information are available on the department website.

Registration, costs, and payment methods: To learn about registration, costs, and payment methods for Adult Basic and Secondary Education, consult the department website.

If you are ready to take that next step in your life, or simply want to find out more information about how we might help, call us or check out the department website.

Cooperative Education

Main Campus, Building 19, Room 231, 541-463-5203, www.lanecc.edu/programs-academics/internships-cooperative-education

Are you interested in earning college credit for on-the-job experience?

Cooperative Education (Co-op) internships give students practical work experience related to their educational and career goals.

Co-op internships offer a chance to:

- Explore and confirm a career choice
- Develop skills and self-confidence
- Develop job contacts and a work history
- Connect classroom learning with real-world applications
- Learn how to prepare a resume and improve interviewing skills

Co-op is a working partnership between the student, Lane Community College, and the Co-op employer. Hundreds of employers participate in the program each year and over 500 Lane students enroll in co-op each year, working in both paid and non-paid positions. Many Co-op students are retained by employers as regular employees after graduation, although employment is not guaranteed.

To get started with Co-op:

1. Contact the Co-op coordinator in your subject area to determine if you are ready for an internship or if your current employment might qualify.
2. Work with your coordinator to set up a Co-op internship
3. Register for Co-op and begin your internship

Credits: Co-op credits may not be audited or taken as pass/no pass. Students can earn up to 12 credits per term and a maximum of 18 credits total while at Lane. One credit equals 36 hours of Co-op work experience and a minimum of 3 credits is generally required. Co-op credits may not be earned for past work experience (see Credit by Assessment).

For questions regarding Cooperative Education in specific areas, go to our contact page to determine the correct coordinator to speak with. For general information regarding Co-op, please call or stop by our office.

Credit for Prior Learning

www.lanecc.edu/copps/documents/credit-prior-learning-procedure

Lane Community College recognizes the value of granting credit for prior learning (CPL) and non-traditional credit awards, provided the practices for granting credit are carefully monitored and documented. The following types of credit for prior learning may be offered:

- College Level Examination Program (CLEP)
- Advanced Placement (AP)
- International Baccalaureate (IB)
- American College of Education Transcript (includes Joint Services Military Transcripts)
- Credit by Exam
- Credit by Assessment

High School Connections

Main Campus, Building 19, Room 231, 541-463-5521,

www.lanecc.edu/programs-academics/academic-departments/high-school-connections

Curriculum for High School Students

Lane's High School Connections office assists high school students in making the transition from high school to college. Local students have an opportunity to earn college credit while dually enrolled at their high school and Lane, through our College Now and RTEC programs. Lane Community College does not offer high school completion diplomas.

College Now classes are taught in the high school during regular school hours by high school instructors approved by Lane. These classes are equivalent to those offered in Lane programs and align with Lane course content, credits and learning outcomes. Courses are taught in many career technical and transfer subject areas. Students must register for the College Now courses in order to receive Lane credit. View College Now course offerings by high school at lanecc.edu/community/education-community/college-now/courses-high-school

Early College, is a collaborative effort with local schools to provide early college opportunities to high school students. High school students have the opportunity to enroll in career technical or transfer courses at the college that are not available at their high school and receive high-quality support from our dedicated advisor. The High School Connections office works with local school districts who sponsor their

students, as well as individual students paying on their own. Additionally, school districts may contract with Lane to provide college courses directly at their location.

RTEC 101 - Gateway to College and Careers is a credit course offered by the High School Connections Office to high school seniors who are interested in attending Lane after graduation or are dual enrolled in another Lane credit class on campus or online. This course prepares students to skillfully navigate Lane systems, become familiar with the many programs and pathways available at Lane, and set their own course for college success. RTEC 101 is a variable credit course for high school students who want to improve their likelihood of success in a college environment. Students self-assess interest areas and strengths, explore career pathways, and gain skills in work ethic and appropriate modes of communication in the college setting.

Honors Program

www.lanecc.edu/programs-academics/honors-program or honors@lanecc.edu

The Lane Honors Program provides students with a transformative learning experience centered around scholarly inquiry, academic rigor, and intellectual growth.

As an honors student, you will receive many educational benefits, including:

- collaborative learning with other engaged students
- faculty mentorship
- guest speakers and honors events
- graduation from Lane with honors recognition
- a competitive edge when applying for scholarships to 4-year universities

If you are transferring to a four-year institution, you will be well-prepared for upper-division coursework and university honors programs. If you are a non-transfer student, you will benefit from the program's opportunities for personal enrichment. Lane Honors classes may fulfill general education electives and requirements for transfer degrees. For a list of current classes, to learn more about the Honors Program or to apply, please visit our website or e-mail with questions.

LaneOnline

Main Campus, Center Building, Room 352, 541-463-5893

www.lanecc.edu/programs-academics/online-distance-learning or email online@lanecc.edu

LaneOnline provides credit courses delivered through technology. Over 250 courses in various subject areas are offered each year. LaneOnline courses follow the same term schedules as on-campus classes and students follow the same admission and registration procedures as on-campus students. In order to participate in LaneOnline courses, students will need access to a computer with internet, current browser, and required software. Tuition for LaneOnline courses is the same as other courses. A \$10 per credit fee is assessed on online, online w/in-person testing, hybrid/in-person, hybrid/zoom, hyflex and live-streaming courses with a maximum of \$50 per course. The fee covers course development, instructor training and support, direct student support, equipment and online tools.

The Associate of Arts Oregon Transfer and Associate of General Studies degrees and significant coursework for other degrees and certificates can be completed by taking online courses through LaneOnline. In order to help easily locate them on the web schedule of classes, online and hybrid courses will have "online" or "hybrid" and the Online/Hybrid icon listed next to the course title. All online courses can be viewed in one location on the website by going to "What courses are available online" and clicking the desired term.

Distance Education Modalities

In all courses, instructors may require students to use Moodle to access assignments or course content. Students must have a computer and a stable broadband internet connection.

Synchronous = there are scheduled class meetings (in person or on Zoom)

Asynchronous = there are no scheduled class meetings

Online (OL)

All course content, resources, assignments, and assessments are online (usually via Moodle). There are no required meeting times on campus or on Zoom (the courses are asynchronous). Student-to-student interaction, teacher-to-student interaction, and social community are hallmarks of online learning.

Online w/In-Person Testing (OT)

Courses in this designation will provide fully asynchronous OR online-synchronous (scheduled meetings over Zoom) instruction but will require students to visit Lane's campus (or another approved testing location) for assessments.

Hybrid/In-Person (HIP)

A portion of the class instruction is conducted online (asynchronously) usually via Moodle, and the rest is conducted during regularly scheduled in-person meetings. The in-person meetings occur on campus at a specified time and attendance is expected.

Hybrid/Zoom (HZ)

A portion of the class instruction is conducted online (asynchronously) usually via Moodle, and the rest is conducted during regularly scheduled Zoom meetings. The Zoom meetings occur at a specified time and attendance is expected.

HyFlex (HF)

A portion of the class instruction is conducted online (asynchronously) usually via Moodle, and the rest is conducted during regularly scheduled meetings. The scheduled meetings are offered in-person and simultaneously on Zoom and attendance is expected. Students can choose on a day-to-day basis whether to attend class either on campus or on Zoom.

Live Streaming (LS)

Live Streaming courses allow students to attend and interact in a course via Zoom at scheduled class meeting times. Some Live Streaming classes may be paired with on-campus courses, so students will be part of a class but will attend online (via Zoom and Moodle).

Courses

Aerospace Science

AS 111 - Foundations of the Air Force Part I

1 Credit(s)

The introduction to the Air Force mission and organization. Featured topics include Air Force dress and appearance standards; military customs and courtesies, Air Force heritage, overview of the Department of the Air Force, and Air Force core values. Basic oral and written communication will be assessed.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Know the general aspects of the Department of the Air Force, AF Leadership, Air Force benefits, and opportunities for AF officers
2. Familiarize themselves with AF heritage and values
3. Familiarize themselves with historical perspectives such as lessons on war and US military, AF operations, principles of war, and airpower
4. Demonstrate basic oral and written communications skills

AS 112 - Foundations of the Air Force Part II

1 Credit(s)

The second part of the introduction to the Air Force mission and organization. Featured topics include Air Force career opportunities, Air Force benefits, military communication skills, Air Force installations, and look at the basic characteristics of war. Basic oral and written communication will be assessed.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Value leadership in the operation and success of any organization.
2. Value the importance of having Integrity First in all things.
3. Remember the variety of career fields available to AFROTC cadets under the Air Force Specialty Code (AFSC) system.
4. Value the importance of the academic choices you make in relation to your future Air Force career choices.
5. Remember the evolution of the Air Force, and its significance from the Wright Brothers to today's Air Force.
6. Value the true essence of being a member of the profession of arms; personal adherence to the Air Force Core Values, clear understanding of the Oath of Office, preparedness to support the Code of Conduct and a willingness to become the Airman portrayed in the Airman's Creed.

AS 113 - Foundations of the Air Force Part III

1 Credit(s)

The third part of the introduction of what the Air Force is about and what the Air Force has to offer. Featured topics include basic leadership, team building, interpersonal skills, diversity in the Air Force, and the oath of office and commissioning. Basic oral and written communication will be assessed.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Remember the importance of proper social media interactions for Air Force members
2. Remember the basic characteristics of war
3. Understand how the principles of war and tenets of airpower contribute to warfare
4. Remember the Air Force organizational structure, its mission, and basic facts about leadership positions
5. Remember the levels of Air Force Doctrine and the types of operations providing airpower to the United States
6. Remember the mission and organization of Air Combat Command (ACC), Air Mobility Command (AMC), Air Force Space Command (AFSPC), Air Education and Training Command (AETC), Air Force Materiel Command (AFMC), Air Force Special Operations Command (AFSOC), Air Force Reserve Command (AFRC), Pacific Air Force (PACAF), United States Air Forces in Europe (USAFE), and Air Force Global Strike Command (AFGSC)

AS 120 - Leadership Laboratory

1 Credit(s)

Cadets learn officership, leadership, drill and ceremony, and customs and courtesies. Lab. Only offered to students enrolled in the AFROTC officer commissioning program.

Corequisite: Taken concurrently with AS 111, AS 112 and AS 113.

Learning Outcomes

Provide first-year cadets an informative and motivational program designed to recruit, retain, and familiarize cadets with the Air Force way of life and foster leadership, followership, teamwork, and esprit de corps.

AS 211 - The Evolution of Air and Space Power 1860-1945

1 Credit(s)

Study of the development of air power, concepts, and doctrine from its beginnings to the end of World War II. Historical examples examined include balloons, dirigibles, Wright Brother's first flight, and the role of airpower in World War I and II. Oral and written communication skills will be assessed.

Corequisite: If enrolled in the AFROTC officer commissioning program, must be taken concurrently with AS 220.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Understand the principles of self-assessment
2. Understand that effective listening positively affects mission accomplishment
3. Understand the traits and characteristics of an effective follower
4. Understand the principles of Full-Range Leadership
5. Understand the APTEC model
6. Understand the concept of motivation

AS 212 - The Evolution of Air and Space Power 1945-1990

1 Credit(s)

Study of the development of air power, concepts, and doctrine during the Cold War. Historical examples examined include the Berlin Airlift, nuclear deterrence, and the role of air power employment in the Korean and Vietnam conflicts. Oral and written communication skills will be assessed.

Corequisite: If enrolled in the AFROTC officer commissioning program, must be taken concurrently with AS 220.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Remember the principles of stress management and resiliency
2. Value the importance of financial readiness
3. Understand the importance of human relations in the workplace
4. Understand why teams are essential for mission accomplishment and how to improve team performance
5. Understand the principles and concepts of conflict management
6. Develop effective public speaking skills and effective communication

AS 213 - The Evolution of Air and Space Power 1991-2025

1 Credit(s)

Study of the factors contributing to the development of air power, concepts, and doctrine from the Persian Gulf War in 1990 to the present and beyond. Historical examples examined include the air campaigns used in the Gulf War, Kosovo crisis, Operations Enduring Freedom, Iraqi Freedom, and the Global War on Terrorism. Oral and written communication skills will be assessed.

Corequisite: If enrolled in the AFROTC officer commissioning program, must be taken concurrently with AS 220.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Understand the importance of and the relationship between standards and accountability
2. Value the importance of Service before Self in one's Air Force Career
3. Respond to the relationship between the AS 200 leadership curriculum as it relates to the movie Remember the Titans
4. Develop effective public speaking skills and effective communication

AS 220 - Leadership Laboratory

1 Credit(s)

Cadets are placed in element leadership positions in order to know and comprehend the Air Force concepts of command, discipline, tradition, and courtesies. Only offered to students enrolled in the AFROTC officer commissioning program.

Corequisite: AS 220 is taken concurrently with AS 211, AS 212, and AS 213.

Learning Outcomes

Provide cadets scheduled to attend Field Training (FT) with the mental and physical skills needed to succeed in the AFROTC FT environment.

American Sign Language

ASL 101 - 1st Year American Sign Language

4 Credit(s)

The first course in a three-course series introduction to American Sign Language (ASL) stressing the development of expressive skill, receptive skill, and cultural awareness through a communication-centered approach. The primary emphasis is on the student's active use of the language. Students will begin to gain active conversational competence in ASL. Course activities include visual readiness skills, vocabulary, culture and grammar. Target ACTFL proficiency level post-course: Novice High. For beginners.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Participate in simple conversations using expressive ASL skills, basic vocabulary, grammar, facial markers, and non-manual signals to engage in common interactions with Deaf people
2. Apply language-learning skills to interactions in the Deaf community
3. Appreciate the linguistic and cultural diversity of Deaf people and behave with respect and understanding

ASL 102 - 1st Year American Sign Language

4 Credit(s)

The second course in a three-course series introduction to American Sign Language (ASL) stressing the development of expressive skill, receptive skill, and cultural awareness through a communication-centered approach. The primary emphasis is on the student's active use of the language. Students will begin to gain active conversational competence in ASL. Course activities include visual readiness skills, vocabulary, culture and grammar. Target ACTFL proficiency level post-course: Intermediate Low.

Prerequisite: ASL 101

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Handle successfully a limited number of interactive, task-oriented and social situations
2. Ask and answer questions, initiate and respond to simple statements and generally maintain face-to-face conversation
3. Continue to apply language-learning skills outside the language classroom

ASL 103 - 1st Year American Sign Language

4 Credit(s)

The third course in a three-course series introduction to American Sign Language (ASL) stressing the development of expressive skill, receptive skill, and cultural awareness through a communication-centered approach. The primary emphasis is on the student's active use of the language. Students will begin to gain active conversational competence in ASL. Course activities include visual readiness skills, vocabulary, culture and grammar. Target ACTFL proficiency level post-course: Intermediate Mid.

Prerequisite: ASL 102

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Handle successfully a variety of uncomplicated, basic and communicative tasks and social situations in a culturally acceptable manner

2. Ask and answer questions and participate in simple conversations on topics beyond the most immediate needs; e.g. giving directions, describing others, making requests, about family and occupations in depth, attributing qualities to others, talking about routines and maintaining and interrupting conversation at appropriate times
3. Act with respect and better understanding of Deaf people and ASL, with an appreciation for their linguistic and cultural diversity

Anthropology

ANTH 101 - Physical Anthropology

4 Credit(s)

An introduction to the study of human evolution, with the goal of understanding humans as part of the natural world and as organisms shaped by their evolutionary past. The course covers the basic processes of evolution, the early human fossil and archaeological record, primate behavior and human genetic variability.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Understand the development of the scientific method and the process of evolution
2. Explain the concepts of natural selection and adaptation and provide clear examples to illustrate these concepts
3. Review ecology and behavior of the living primates and explain their positions within the biological classification system
4. Understand and be able to explain the phylogenetic relationships, including alternative hypotheses, among fossil hominids and living primates
5. Understand and discuss the methods and thought processes involved in the reconstruction of the pattern of human evolution
6. Analyze and interpret the physical and cultural remains of early humans (and human ancestors) in order to understand the diverse biological and social adaptations associated with the emergence of humanity and how this diversity informs us in our societal relationships today

ANTH 102 - World Archaeology

4 Credit(s)

This course serves as an introduction to foundational aspects of archaeology including methods, theory, and the major progression through time of culture and technology. It traces the transition of human societies from a predominantly hunting and gathering way of life to a settled farming, and ultimately urban, way of life. The course focuses on the rise of social complexity in ancient civilizations such as Mesopotamia, Egypt, India, China, South America, MesoAmerica, and North America.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Understand the importance of the scientific method and the scope of archaeological research within the broader discipline of anthropology
2. Review the history of archaeological method and theory through an analysis of ancient civilizations. Explain field and laboratory techniques currently used to interpret archaeological sites. These techniques include locating, mapping, dating, and analyzing cultural remains
3. Trace and discuss evidence for the cultural and environmental processes involved in the transition of human societies from nomadic foraging to settled farming and urban ways of life
4. Identify and analyze various hypotheses concerning the causes related to major cultural shifts over time and across space
5. Analyze and discuss archaeological evidence for the major migrations of human societies out of Africa and into Asia, Europe, Australia, the Pacific Islands and North and South America
6. Analyze and discuss reasons for the rise and fall of ancient civilizations. Relate this discussion to issues and trends observed in the contemporary world
7. Explore where and how human experience of the past is linked to the present

ANTH 103 - Cultural Anthropology

4 Credit(s)

A comparative cross-cultural explanation of how cultural learning shapes human behavior. Aspects of culture to be examined include patterns of subsistence social structures, marriage and family, political processes, social control, religious beliefs and practices, and worldview and values.

Learning Outcomes

Upon successful completion of this course, the will should be able to:

1. Demonstrate an understanding of cultural anthropology as a sub-field within the broader discipline of anthropology
2. Explain past and contemporary theoretical approaches employed in cultural anthropology and ethnographic research
3. Identify and analyze ways in which culture shapes human behavior in order to develop a deeper understanding of the vast similarities and differences that exist among human cultures
4. Discuss the concepts of cultural relativism, ethnocentrism, and participant observation
5. Describe anthropology's position on race
6. Illustrate the relationship of language and culture
7. Demonstrate knowledge and appreciation of cross-cultural adaptive patterns through the exploration of subsistence strategies, marriage, family and kinship, gender and sexuality, political order and social stratification, belief systems, and artistic expression
8. Understand the effects of globalization on indigenous peoples around the world
9. Analyze and discuss why indigenous knowledge matters in the contemporary world

ANTH 227 - Prehistory of Mexico

4 Credit(s)

First term of a two-term sequence of Anthropology courses which deal with the culture of Americans of Mexican descent. This term, the focus is on the archaeology and cultural anthropology of Mesoamerica. Olmec, Zapotec, Toltec, Mayan, and Aztec cultures are surveyed. This course draws upon a number of different resources: readings, videos, student presentations, and artwork, to obtain as accurate a knowledge and understanding of these cultures as is presently possible.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior: Analyze and identify the forces and factors contributing to the rise and transformation of civilizations from food foraging to state societies in Pre-Columbian Mesoamerica.
2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live: Compare and contrast ancient cultural forms with modern contemporary religious, political, economic, and social beliefs and practice; noting the cultural diversity within these two civilizational arcs.
3. Understand the role of individuals and institutions within the context of society: Compare and contrast the communal, collective socio-cultural patterns of Pre-Columbian Mesoamerica with the individualistic, atomistic socio-cultural patterns of modern America. Discussion of the strengths and weaknesses of both patterns.
4. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry: Introduction and discussion of competing theories for the origin of "civilization" in general and of civilizations in Pre-Columbian Mesoamerica in particular. Introduction and discussion of theories of the Maya Collapse. Assessment of which theories are best supported by archaeological and ethnographic evidence.
5. Utilize appropriate information literacy skills in written and oral communication: In-class discussion and analysis of course readings; take-home essay exams based on evaluation and synthesis of archeological data and their cultural implications.
6. Understand the diversity of human experience and thought, individually and collectively: Identify and illustrate common human needs present in every culture but that are met in different ways at different times and in different places, as shown in the course of Mesoamerican prehistory. Identify cultural themes and patterns in mythologies, and their symbolization of differing world views.
7. Apply knowledge and skills to contemporary problems and issues: Links subsistence, economic, and ecological factors to the rise and collapse of civilizations in Mesoamerica and the relevance of these to modern cultural ecology.

ANTH 228 - Chicano Cultures

4 Credit(s)

This course is the second term of a two (2) term sequence. The course explores the historical roots and cultural anthropology of contemporary Mexican Indians and Mexican Americans (Chicano). It examines the impact of colonialism on Mesoamerican Indian cultures and, after the origin of Mexican Americans post Mexican-American War, its influence on Chicano cultures. Students will be exposed to the objectives and findings of cultural anthropology, as well as encouraged to appreciate the cultural differences and similarities within and

between Mexican Indians and Chicanos.

Learning Outcomes

On successful completion of this course, students will be able to:

1. Describe and discuss the main objectives and methodologies of cultural anthropology
2. Describe and discuss the main cultural characteristics of contemporary Mesoamerican Indians – Nahua in particular
3. Describe and discuss the influences of European colonialism on indigenous Mexican peoples
4. Identify and discuss the major factors leading to emergence of Mexican Americans (Chicanos)
5. Identify and discuss the main outlines of Chicano cultures and their similarity and difference from traditional Mexican Indian and Anglo-American cultures

ANTH 231 - American Indian Studies

3 Credit(s)

First term of a three-term sequence of Anthropology courses dealing with the native cultures of North America, this one focusing on the people and cultures indigenous to the Northeastern and Southeastern states of America. Ojibwa, Iroquois, Creek, and Natchez cultures are emphasized. All three courses draw on a number of different resources: readings, videos, student presentations, works of art, to obtain an understanding of the history and cultural heritage of contemporary native peoples of America in the north and southeastern states.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior: Identification of the main cultural domains and their interrelations (subsistence, economics, political and social structure, religion, etc.) as manifested in Northeastern and Southeast Native American cultures, and the role these play in generation of Native American beliefs and practices
2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live: Compare and contrast Northeastern and Southeastern cultural patterns and characteristics. Compare and contrast cultural patterns and characteristics of modern America with "traditional" Northeastern and Southeastern Indian cultures
3. Understand the role of individuals and institutions within the context of society: Discussion of differences between Northeastern and Southeastern Indian cultures' and American culture's concept of "the individual" and the individual's relation to the community. Comparisons and contrast of American and native worldviews
4. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry: Presents theories of cultural development, assimilation, and acculturation and assess their adequacy in relation to what is known of Northeastern and Southeastern Indian cultural development
5. Utilize appropriate information literacy skills in written and oral communication: In-class discussion and evaluation of course readings; term papers and take-home essay exams focusing on data and argument explication and evaluation
6. Understand the diversity of human experience and thought, individually and collectively: Presentation and discussion of Native American Indian worldview and "religion". Comparison and contrast with general worldview and religion of non-Native America. Discussion of the interconnectedness of the ideal and the real
7. Apply knowledge and skills to contemporary problems and issues: Illustrates and discusses ways in which Native American cultural beliefs and practices have avoided certain problems of contemporary society, and therefore provide a model for possible solutions to ecological, social, and spiritual problems and issues of modern American society

ANTH 232 - American Indian Studies

3 Credit(s)

Second term of a three-term sequence of Anthropology courses dealing with native cultures of North America, focusing on the people and cultures indigenous to the Central and Southwestern states of America. Kiowa, Mandan, Navaho, and Zuni cultures are emphasized. Course design as described for ANTH 231 and may be taken out of sequence.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior: Analyze and identify the main cultural and social characteristics Native American cultures in the Plains and Southwestern areas of the U.S., as well as the cultural beliefs, institutions, and practices which differentiation and integrate these two cultural areas
2. Apply knowledge and experience to foster personal growth and better

appreciate the diverse social world in which we live: Compare and contrast Plains and Southwestern native cultural forms with one another and with modern contemporary religious, political, economic, and social beliefs and practice; noting the cultural diversity as well as the unity within and between these two native cultures

3. Understand the role of individuals and institutions within the context of society:

Compare and contrast the communal and collective socio-cultural patterns of traditional Plains and Southwestern Indian cultures with the individualistic, atomistic socio-cultural patterns of modern America

4. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry: Introduction and discussion of competing theories of the origin of "civilization"; the forces and factors contributing to the way given native cultures in North America developed. Analysis of the fit of these theories to what is known about Plains and Southwestern Indian cultures

5. Utilize appropriate information literacy skills in written and oral communication: In-class discussion and evaluation of course readings; term papers and take-home essay exams focusing on data and argument explication and evaluation

6. Understand the diversity of human experience and thought, individually and collectively: Identify cultural themes and patterns in Plains and Southwest Indian religion and mythologies, and their symbolization of differing world views, comparison and contrast of such with modern American religion and mythology

7. Apply knowledge and skills to contemporary problems and issues: Links Plains and Southwestern Indian subsistence, economic, and ecological practices and beliefs with their impact on the environment and the ecology, and the relevance of these to modern cultural ecology

Apprenticeship

APR 101 - Trade Skills Fundamentals

4 Credit(s)

This course provides an introduction into the apprenticeship industry and the necessary skills required for selection into a specific trade career. Students will explore current trends in Apprenticeship and basic requirements to enter individual programs. Students will become familiar with licensing and certification in a chosen trade. General topics include: industry opportunities and basic concepts in basic safety, trade vocabulary, trade calculations, hand and power tool care and use, blueprint reading, rigging, and materials and handling, in addition to basic communication and employability skills.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Understand and describe the application and selection procedures for an apprenticeship trade, employer expectations, and workplace responsibilities.
2. Employ appropriate and safe workplace behavior, common safety practices, and use of personal protective equipment.
3. Effectively use common trade calculations in standard and metric lengths, areas, weights, volumes, etc.
4. Recognize, identify and safely use and care for various hand and power tools, employ common safety practices, and use different types of protective gear.
5. Understand basic blueprint terms, components, symbols, drawing classifications and dimensions, and interpret drawings.
6. Identify and describe basic rigging slings, hitches, hardware, signals, and safety.
7. Choose appropriate materials-handling equipment for the task and recognize hazards.
8. Demonstrate ability to interpret information both verbally and in writing and communicate effectively in on-the-job situations using both written and verbal skills.
9. Demonstrate effective relationship skills with co-workers and supervisors, ability to work on a team, and appropriate leadership skills.

APR 101A - Trade Skills Fundamentals

4 Credit(s)

Designed for Oregon state-recognized apprentices employed in a specific trade. The curriculum is competency-based and modular in format. This course provides the necessary skills required for a variety of trade careers. Students will become familiar with licensing and certification in a chosen trade. General topics include: employability skills and an introduction to construction and maintenance skills used in various crafts. Basic concepts in safety, construction math, hand and power tools, construction drawings, basic rigging, and materials handling are examined in this course.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Understand and describe the application and selection procedures for an apprenticeship trade, employer expectations, and workplace responsibilities.
2. Employ appropriate and safe workplace behavior, common safety practices, and use of personal protective equipment.
3. Effectively use common trade calculations in standard and metric lengths, areas, weights, volumes, etc.
4. Recognize, identify and safely use and care for various hand and power tools, employ common safety practices, and use different types of protective gear.
5. Understand basic blueprint terms, components, symbols, drawing classifications and dimensions, and interpret drawings.
6. Identify and describe basic rigging slings, hitches, hardware, signals, and safety.
7. Choose appropriate materials-handling equipment for the task and recognize hazards.
8. Demonstrate ability to interpret information both verbally and in writing and communicate effectively in on-the-job situations using both written and verbal skills.
9. Demonstrate effective relationship skills with co-workers and supervisors, ability to work on a team, and appropriate leadership skills.

APR 101I - Trade Skills Fundamentals

4 Credit(s)

This course provides an introduction into the apprenticeship industry and the necessary skills required for selection into a specific trade career. Students will explore current trends in Apprenticeship and basic requirements to enter individual programs. Students will become familiar with licensing and certification in a chosen trade. General topics include: industry opportunities and basic concepts in basic safety, trade vocabulary, trade calculations, hand and power tool care and use, blueprint reading, rigging, and materials and handling, in addition to basic communication and employability skills.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Understand and describe the application and selection procedures for an apprenticeship trade, employer expectations, and workplace responsibilities.
2. Employ appropriate and safe workplace behavior, common safety practices, and use of personal protective equipment.
3. Effectively use common trade calculations in standard and metric lengths, areas, weights, volumes, etc.
4. Recognize, identify and safely use and care for various hand and power tools, employ common safety practices, and use different types of protective gear.
5. Understand basic blueprint terms, components, symbols, drawing classifications and dimensions, and interpret drawings.
6. Identify and describe basic rigging slings, hitches, hardware, signals, and safety.
7. Choose appropriate materials-handling equipment for the task and recognize hazards.
8. Demonstrate ability to interpret information both verbally and in writing and communicate effectively in on-the-job situations using both written and verbal skills.
9. Demonstrate effective relationship skills with co-workers and supervisors, ability to work on a team, and appropriate leadership skills.

APR 105 - Electrical Wiring for the Trades

4 Credit(s)

This course is designed to familiarize the student with work tasks in the electrical construction industry. In this introductory course, the student will learn basic electrical concepts and build basic circuits using physical components of residential electrical systems. The student will study and be introduced to electrical trade tools, equipment and materials.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Define electrical trade terms.
2. Demonstrate basic safety techniques.
3. Identify and use basic tools common to residential wiring.
4. Apply basic Ohm's law equations.
5. Identify residential service entrance equipment and functions.
6. Recognize and use basic wiring diagrams.
7. Build and test basic wiring circuits.

APR 106 - Plumbing Trade Introduction

2 Credit(s)

This course is designed to familiarize the student with basic plumbing practices and completion of minor repairs. In this beginning course, basic plumbing concepts and exposure to tools, safety practices, materials, codes, and plumbing opportunities will be explored. This course does not require any previous knowledge or skill in plumbing. For those seeking a career in plumbing, successful class completion may earn points that are recognized by plumbing Joint Apprenticeship and Training Committees in the State of Oregon.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Identify opportunities in the plumbing trade.
2. Demonstrate basic safety techniques.
3. Identify conditions requiring permits and work completion to Uniform Plumbing Code.
4. Identify components of plumbing systems, drainage, and water.
5. Recognize different plumbing fixtures and applications.
6. Understand overview of private water wells and sprinkler systems.
7. Gain knowledge of the different aspects of maintenance of plumbing systems.
8. Perform replacement and repair simple faucets and fixtures.

APR 115 - Carpentry Skill Fundamentals

3 Credit(s)

Designed for Oregon state-recognized apprentices employed in the carpentry trade. The curriculum is competency-based and modular in format. This course introduces students to fundamental concepts and skills required of trades people. Participants will receive training in employability and communication skills, and an orientation to the carpentry trade. This course includes introduction to hand and power tool use, safety, building materials, and blueprint reading.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Explain the construction industry, the role of the companies that make up the industry, and the role of individual professionals in the industry (00108-04).
2. Demonstrate the ability to communicate effectively in on-the-job situations using written and verbal skills (00107-04).
3. Describe the history of the carpentry trade (27101-06).
4. Identify the aptitudes, behaviors, and skills needed to be a successful carpenter (27101-06).
5. Use hand tools in a safe and appropriate manner (27103-06).
6. Understand the general safety rules for operating all power tools, regardless of type (27103-06).
7. Identify various types of building materials and their uses (27102-06).
8. Describe the fasteners, anchors, and adhesives used in construction work and explain their uses (27102-06).
9. Recognize and identify basic blueprint terms, components, and symbols (00105-04).
10. Interpret and use drawing dimensions (00105-04).
11. Identify selected electrical, mechanical, and plumbing symbols commonly used on plans (27104-06).
12. Read and interpret plans, elevations, schedules, sections, and details contained in basic Construction drawings (27104-06).

APR 116 - Carpentry Framing Fundamentals

3 Credit(s)

Designed for Oregon state-recognized apprentices employed in the carpentry trade. The curriculum is competency-based and modular in format. This course introduces students to math concepts and fundamental construction math concepts utilized by professional carpenters. Floor, wall and ceiling framing systems are presented as well.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Add, subtract, multiply, and divide whole numbers, with and without a calculator (00102-04).
2. Convert decimals to percentages and percentages to decimals (00102-04).
3. Convert fractions to decimals and decimals to fractions (00102-04).
4. Recognize some of the basic shapes used in the construction industry, and apply basic geometry to measure them (00102-04).
5. Identify the different types of framing systems (27105-06).
6. Select the proper joist size from a list of available joists, given specific floor load and span data (27105-06).

7. Explain the purposes of subflooring and underlayment (27105-06).
8. Estimate the amount of material needed to frame a floor assembly (27105-06).
9. Describe the procedure for laying out a wood frame wall, including plates, corner posts, door and window openings, partition Ts, bracing, and fire stops (27106-06).
10. Layout, assemble, erect, and brace exterior walls for a framed building (27106-06).
11. Cut and install ceiling joists on a wood frame building (27106-06).

APR 117 - Carpentry Framing and Introduction to Concrete

3 Credit(s)

Designed for Oregon state-recognized apprentices employed in the carpentry trade. The curriculum is competency-based and modular in format. This course introduces students to framing roofs, windows and exterior doors, as well as an introduction to concrete.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Identify the methods used to calculate the length of a rafter (27107-06).
2. Use a rafter framing square, speed square, and calculator in laying out a roof (27107-06).
3. Frame a gable roof with vent openings (27107-06).
4. Identify various types of fixed, sliding, and swinging windows (27109-06).
5. State the requirements for a proper window installation (27109-06).
6. Identify the common types of exterior doors and explain how they are constructed (27109-06).
7. Identify the parts of a door installation (27109-06).
8. Describe the composition of concrete (27108-06).
9. Identify types of concrete reinforcement materials and describe their uses (27108-06).
10. Identify the parts of various types of forms (27108-06).

APR 118 - Carpentry Framing and Finishing

3 Credit(s)

Designed for Oregon state-recognized apprentices employed in the carpentry trade. The curriculum is competency-based and modular in format. This course introduces students to framing with steel studs, commercial door installation, and explains how to install and finish drywall.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Identify the components of a steel framing system (27205-07).
2. Demonstrate the ability to build back-to-back, box, and L-headers (27205-07).
3. Identify the different types of drywall and their uses (27206-07).
4. Perform single-layer and multi-layer drywall installations using different types of fastening systems, including nails, drywall screws & adhesives (27206-07).
5. Explain how soundproofing is achieved in drywall installations (27206-07).
6. Explain the differences between the six levels of finish established by industry standards and distinguish a finish level by observation (27207-07).
7. Properly finish drywall using hand tools (27207-07).
8. Repair damaged drywall (27207-07).
9. Identify various types of doorjamb and frames and demonstrate the installation procedures for placing selected doorjamb and frames in different types of interior partitions (27208-07).
10. List and identify specific items included on a typical door schedule (27208-07).
11. Demonstrate the procedure for placing and hanging a selected door (27208-07).

APR 119 - Carpentry Commercial Plans and Exterior Finish

3 Credit(s)

Designed for Oregon state-recognized apprentices employed in the carpentry trade. The curriculum is competency-based and modular in format. This course introduces students to common materials used in residential and light commercial roofing. Application methods, commercial plans, insulation and vapor barrier materials and installation will also be covered, as well as exterior finish materials and application procedures

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Identify the materials and methods used in roofing (27202-07).
2. Install fiberglass shingles on gable and hip roofs (27202-07).
3. Layout, cut, and install a cricket or saddle (27202-07).
4. Explain how to make roof projections watertight when using wood shakes and shingles (27202-07).
5. Accurately read a set of commercial drawings (27201-07).

6. Explain basic construction details and concepts employed in commercial construction (27201-07).
7. Describe the characteristics of various types of insulation material (27203-07).
8. Install selected insulation materials (27203-07).
9. Understand the requirements for moisture control and ventilations (27203-07).
10. Describe various methods of waterproofing (27203-07).
11. Describe the purpose of wall insulations and flashing (27204-07).
12. Demonstrate lap and panel siding estimating methods (27204-07).
13. Describe the types and applications of common wood siding (27204-07).
14. Explain fiber-cement siding and its uses (27204-07).
15. Describe the types and styles of vinyl and metal siding (27204-07).
16. Describe the types and applications of stucco and masonry veneer finishes (27204-07).
17. Explain the types and applications of special exterior finish systems (27204-07).

APR 120 - Carpentry Interior Finish

3 Credit(s)

Designed for Oregon state-recognized apprentices employed in the carpentry trade. The curriculum is competency-based and modular in format. This course introduces students to the materials, layout, and installation procedures for many types of suspended ceilings. Students will also learn the selection and installation of different trim types used in finish work, layout and installation of basic stairs, as well as methods of proper cabinet installation.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Establish a level line (27209-07).
2. Identify the different types of suspended ceilings (27209-07).
3. Interpret plans related to ceiling layout (27209-07).
4. Make square and miter cuts using a miter box or power miter saw (27210-07).
5. Make coped joint cuts using a coping saw (27210-07).
6. Install interior trim, including Door, Window, Base and Ceiling trim (27210-07).
7. Layout factory-made cabinets, countertops, and backsplashes (27211-07).
8. Explain the installation of an island base (27211-07).
9. Calculate the total rise, number and size of risers, and number and size of treads required for a stairway (27110-06).
10. Layout and cut stringers, risers, and treads (27110-06).

APR 130 - Electrical Principles

5 Credit(s)

Designed for Oregon state recognized apprentices employed in a trade or industry-related occupation. This course is the first term of the first year of general journeyman inside wire electrician program. Course content will include safety/electrical, electrical theory, Ohm's law, residential wiring, and introduction to the National Electrical Code.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Demonstrate a working knowledge of safety in the workplace, hand tools, electrical math and electrical principles
2. Demonstrate a working knowledge of OSHA regulations
3. Demonstrate a working knowledge of electrical symbols, safety, and circuits
4. Demonstrate a working knowledge of electrical theory
5. Demonstrate the ability to calculate OHM's law formulas
6. Demonstrate a working knowledge of series and parallel circuits and fundamentals
7. Demonstrate a working knowledge of the National Electrical Code

APR 130A - Electrical Principles

4 Credit(s)

Designed for Oregon state recognized apprentices employed in a trade or industry-related occupation. This course is the first term of the first year of general journeyman inside wire electrician program. Course content will include safety/electrical, electrical theory, Ohm's law, residential wiring, and introduction to the National Electrical Code.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Demonstrate a working knowledge of safety in the workplace, hand tools, electrical math and electrical principles
2. Demonstrate a working knowledge of OSHA regulations

3. Demonstrate a working knowledge of electrical symbols, safety, and circuits
4. Demonstrate a working knowledge of electrical theory
5. Demonstrate the ability to calculate OHM's law formulas
6. Demonstrate a working knowledge of series and parallel circuits and fundamentals
7. Demonstrate a working knowledge of the National Electrical Code

APR 131 - Electrical Principles/Residential Wiring

5 Credit(s)

Designed for Oregon state-recognized apprentices employed in a trade or industry-related occupation. This course is the second term of the first year of general journeyman inside wire electrician program. Course content will cover basic AC theory, series/parallel circuits, mathematical formulas, conduit bending, use of test equipment, and applicable references to the National Electrical code.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Demonstrate a base understanding of the OHM's Law.
2. Demonstrate a working knowledge of the ability to identify characteristics of series and parallel circuits.
3. Demonstrate a knowledge of residential wiring.
4. Understand the concepts of Boyle's Law, Charles' Law, and Kirchiov's Law.
5. Demonstrate a working knowledge of the National Electrical Code.

APR 131A - Electrical Principles/Residential Wiring

4 Credit(s)

Designed for Oregon state recognized apprentices employed in a trade or industry-related occupation. This course is the second term of the first year of general journeyman inside wire electrician program. Course content will cover basic AC theory, series/parallel circuits, mathematical formulas, conduit bending, use of test equipment, and applicable references to the National Electrical code.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Demonstrate a base understanding of the OHM's Law
2. Demonstrate a working knowledge of the ability to identify characteristics of series and parallel circuits
3. Demonstrate a knowledge of residential wiring
4. Understand the concepts of Boyle's Law, Charles' Law, and Kirchiov's Law
5. Demonstrate a working knowledge of the National Electrical Code

APR 132 - Electrical Residential Wiring Lab

3 Credit(s)

Designed for Oregon state recognized apprentices employed in a trade or industry-related occupation. This course is the third term of the first year of general journeyman inside wire electrician program. This class is designed to cover hands-on demonstration and practicals of basic residential one- and two-family dwellings wiring techniques to include receptacles, services, lighting, wiring, conduit bending, structural wiring, and introduction to residential data communication systems.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Demonstrate the techniques and requirements for basic 1 and 2 family dwelling electrical installations.
2. Demonstrate basic residential wiring skills.
3. Demonstrate understanding of wiring methods (2-way and 4-way split).
4. Demonstrate a working knowledge of receptacles, lighting, and fixtures.
5. Demonstrate a working knowledge of the National Electrical Code.

APR 133 - Electrical Generators, Transformers, and Motors 1

5 Credit(s)

Designed for Oregon state recognized apprentices employed in a trade or industry-related occupation. This course is the first term of the second year of general journeyman inside wire electrician program which includes technical knowledge of the skills required of an Inside Wire Electrician. General topics include safety/electrical, advanced electrical theory, electrical math, AC theory, motors, generators, and transformer theory, and 3-phase power, and commercial installations and calculations. All course content will include references to applicable NEC Articles.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Demonstrate a working knowledge of electrical safety and advanced electrical math.

2. Demonstrate a knowledge of electrical theory including; atomic theory, electron principles, magnetism, generators, a/c and d/c theory, resistance, Ohm's law, series and parallel circuits, voltage and amperage.
3. Demonstrate a base understanding of the AC Circuits.
4. Demonstrate a working knowledge of the National Electrical Code.

APR 133A - Electrical Generators, Transformers, and Motors 1

4 Credit(s)

Designed for Oregon state recognized apprentices employed in a trade or industry-related occupation. This course is the first term of the second year of general journeyman inside wire electrician program which includes technical knowledge of the skills required of an Inside Wire Electrician. General topics include safety/electrical, advanced electrical theory, electrical math, AC theory, motors, generators, and transformer theory, and 3-phase power, and commercial installations and calculations. All course content will include references to applicable NEC Articles.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Demonstrate a working knowledge of electrical safety and advanced electrical math
2. Demonstrate a knowledge of electrical theory including; atomic theory, electron principles, magnetism, generators, a/c and d/c theory, resistance, Ohm's law, series and parallel circuits, voltage and amperage
3. Demonstrate a base understanding of the AC Circuits
4. Demonstrate a working knowledge of the National Electrical Code

APR 134 - Electrical Generators, Transformers and Motors 2

5 Credit(s)

Designed for Oregon state recognized apprentices employed in a trade or industry-related occupation. This course is the second term of the second year of general journeyman inside wire electrician program. General topics include safety/electrical, hazardous locations, health care facilities, industrial and commercial wiring, and references to applicable NEC Articles.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Demonstrate understanding of single and three phase transformers.
2. Demonstrate a working knowledge of DC generators, DC Motors, 3 phase motors and single phase motors.
3. Understand the concepts of sizing and protecting motors and troubleshooting motor windings and components.
4. Demonstrate a working knowledge of the National Electrical Code.

APR 134A - Electrical Generators, Transformers and Motors 2

4 Credit(s)

Designed for Oregon state recognized apprentices employed in a trade or industry-related occupation. This course is the second term of the second year of general journeyman inside wire electrician program. General topics include safety/electrical, hazardous locations, health care facilities, industrial and commercial wiring, and references to applicable NEC Articles.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Demonstrate understanding of single and three phase transformers
2. Demonstrate a working knowledge of DC generators, DC Motors, 3 phase motors and single phase motors
3. Understand the concepts of sizing and protecting motors and troubleshooting motor windings and components
4. Demonstrate a working knowledge of the National Electrical Code

APR 135 - Electrical, Generators, Transformers, and Motors Lab

3 Credit(s)

Designed for Oregon state recognized apprentices employed in a trade or industry-related occupation. This course is the third term of the second year of general journeyman inside wire electrician program. Course will include hands-on experience in basic wiring of transformers and motors to include identification of motor component leads. Course activities build on those learned in prior courses and enable students to build their skills before being introduced to process control and automation and motor controls.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Identify and install standard electrical motors.
2. Demonstrate the ability to correctly wire transformers.
3. Demonstrate the ability to wire, test, and troubleshoot motors.

4. Demonstrate a working knowledge of basic start-stop techniques.
5. Demonstrate a working knowledge of the National Electrical Code.

APR 140 - Electrical Systems Installation Methods

4 Credit(s)

Designed for Oregon state-recognized apprentices employed in a trade or industry-related occupation. This course explores construction materials and methods used in the installation of limited electrical systems along with the NEC codes that regulate installation. Students will learn a knowledge base consisting of the basic theory, vocabulary and safety practices common to limited electrical installations.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Identify different materials used in residential and commercial construction.
2. Describe common telecommunication pathway routing.
3. Identify the names and uses of various types of fasteners and anchors.
4. Describe the methods used for the hand bending of conduit.
5. Describe the tools, materials and procedures used in low voltage cabling.
6. Demonstrate familiarization with the National Electric Code.

APR 140I - Industrial Instrumentation Technician Trade Orientation

4 Credit(s)

Designed for Oregon state-recognized apprentices employed in a trade or industry-related occupation. This course explores construction materials and methods used in the installation of limited electrical systems along with the NEC codes that regulate installation. Students will learn a knowledge base consisting of the basic theory, vocabulary and safety practices common to limited electrical installations.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Identify different materials used in residential and commercial construction.
2. Describe common telecommunication pathway routing.
3. Identify the names and uses of various types of fasteners and anchors.
4. Describe the methods used for the hand bending of conduit.
5. Describe the tools, materials and procedures used in low voltage cabling.
6. Demonstrate familiarization with the National Electric Code.

APR 141 - Limited Voltage Electrical Circuits

4 Credit(s)

Designed for Oregon state-recognized apprentices employed in a trade or industry-related occupation. This course explores the basic laws of electrical theory and the safety practices employed in the limited electrical field. Power quality, trade repairs and installations, and blueprint reading will be reviewed along with the NEC codes that regulate the trade. Students learn a knowledge base consisting of the basic theory, vocabulary and safety practices common to limited energy installations.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Utilize basic electrical theory as it applies to the trade.
2. Perform Ohm's Law calculations.
3. Explain the various types of equipment to perform tests, calibrations, and system measurements common to the low voltage electrical trades.
4. Use standard methods to perform basic circuit analysis.
5. Recognize the purpose and need for proper grounding and bonding.
6. Define common causes of poor power quality.
7. Identify and demonstrate basic knowledge of data telecommunication intercom and paging systems.

APR 141I - Industrial Instrumentation Technician Gaskets, Mathematics and Drawings

4 Credit(s)

Designed for Oregon state-recognized apprentices employed in a trade or industry related occupation. This course explores the basic laws of electrical theory and the safety practices employed in the limited electric field. Power quality, trade repairs and installations and blueprint reading will be reviewed along with the NEC codes that regulate the trade. Students learn a knowledge base consisting of the basic theory, vocabulary and safety practices common to limited energy installations

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Utilize basic electrical theory as it applies to the trade.
2. Perform Ohm's Law calculations.

3. Explain the various types of equipment to perform tests, calibrations, and system measurements common to the low voltage electrical trades.
4. Use standard methods to perform basic circuit analysis.
5. Recognize the purpose and need for proper grounding and bonding.
6. Define common causes of poor power quality.
7. Identify and demonstrate basic knowledge of data telecommunication intercom and paging systems.

APR 142 - Devices, Testing Equipment and Code

4 Credit(s)

Designed for Oregon state-recognized apprentices employed in a trade or industry-related occupation. This course focuses on switching devices, wire and cable terminations, and advanced testing equipment used in electronic and information technology disciplines. Emphasis is placed on developing troubleshooting skills and interpreting the National Electrical Code as it applies to installations and maintenance of low voltage systems. Students will gain knowledge of the basic theory, vocabulary and safety practices used in hook ups, testing, computer applications and specialized test equipment common to the Limited Energy Technician trades.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Select switching devices for specific applications.
2. Demonstrate proper techniques in low voltage cabling.
3. Employ NEC practices common to the Limited Energy trade.
4. Identify computer related hardware as it applies to information technology installations.
5. Solve troubleshooting problems through the use of specialized test equipment.

APR 142I - Industrial Instrumentation Technician Test Equipment, Pumps, Valves and Lubrication

4 Credit(s)

Designed for Oregon state-recognized apprentices employed in a trade or industry-related occupation. This course focuses on switching devices, wire and cable terminations, and advanced testing equipment used in electronic and information technology disciplines. Emphasis is placed on developing troubleshooting skills and interpreting the National Electrical Code as it applies to installations and maintenance of low voltage systems. Students will gain knowledge of the basic theory, vocabulary and safety practices used in hook ups, testing, computer applications and specialized test equipment common to the Limited Energy Technician trades.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Select switching devices for specific applications
2. Demonstrate proper techniques in low voltage cabling
3. Employ NEC practices common to the Limited Energy trade
4. Identify computer related hardware as it applies to information technology installations
5. Solve troubleshooting problems through the use of specialized test equipment

APR 143 - Limited Voltage Cabling

4 Credit(s)

Designed for Oregon state-recognized apprentices employed in a trade or industry-related occupation. This course provides an overview of the types of cable used for various low-voltage installations. Also, covers the methods used to select the proper size and type of cable for a typical installation. Provides information and detailed instructions for selecting, installing, and testing connectors and other terminating devices on the various cables used in low-voltage work, including telecommunications, video and audio, and fiber optics. Covers grounding and bonding of electrical systems. Discusses NEC® regulations pertaining to grounding and bonding. Covers equipment and devices used for grounding and bonding, including their methods of installation. Explains power quality, along with the causes and effects of poor power quality.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Select the proper size and type of cable for a typical installation
2. Calculate voltage drops and size conductors for a given load
3. Describe tools and methods used for conductor connections and terminations
4. Understand the uses for various types of both soldered and solderless connectors
5. Explain the purpose of grounding and describe different types of grounding

techniques

6. Recognize different types of AC and DC supplies and power conditioning devices

APR 143I - Industrial Instrumentation Technician Electrical Theory and National Electrical Code

4 Credit(s)

Designed for Oregon state-recognized apprentices employed in a trade or industry-related occupation. This course explores cable selection buses, network systems and fiber optic communications. An emphasis is placed on connections as used in various video and control systems. Students will gain knowledge of the basic theory, vocabulary and safety practices common to communication and control systems.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Select switching devices for specific applications.
2. Demonstrate proper techniques in low voltage cabling.
3. Employ NEC practices common to the Limited Energy trade.
4. Identify computer related hardware as it applies to information technology installations.
5. Solve troubleshooting problems through the use of specialized test equipment.

APR 144 - Communications

4 Credit(s)

Designed for Oregon state-recognized apprentices employed in a trade or industry related occupation. This course explores wireless communications, as well as site survey and project planning. An emphasis is placed on the operations and principles involved in troubleshooting and the skills necessary to perform as a successful crew leader. Students will learn basic theory, vocabulary and safety practices common to maintenance and repair, wireless communications and project planning

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Summarize common types of radio frequency (RF) systems.
2. Perform site surveys for both new and retrofit projects.
3. Troubleshoot low voltage equipment problems to the system or component level.
4. Institute the people handling skills common to successful supervisors.
5. Identify common types of low voltage system repairs.
6. Perform various load calculations for equipment housed in racks.
7. Discuss principles of project planning and management.
8. Describe practices used for assembling electronic system enclosures.

APR 144I - Industrial Instrumentation Technician Test Equipment

4 Credit(s)

Designed for Oregon state-recognized apprentices employed in a trade or industry related occupation. This course explores, wireless communications as well as site survey and project planning. An emphasis is placed on the operations and principles involved in troubleshooting and the skills necessary to perform as a successful crew leader. Students will learn basic theory, vocabulary and safety practices common to maintenance and repair, wireless communications and project planning

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Summarize common types of radio frequency (RF) systems.
2. Perform site surveys for both new and retrofit projects.
3. Troubleshoot low voltage equipment problems to the system or component level.
4. Institute the people handling skills common to successful supervisors.
5. Identify common types of low voltage system repairs.
6. Perform various load calculations for equipment housed in racks.
7. Discuss principles of project planning and management.
8. Describe practices used for assembling electronic system enclosures.

APR 150 - The Millwright and Shop Safety

5 Credit(s)

Designed for Oregon state-recognized apprentices employed in the millwright industry. This course provides an overview of workplace practices and how to succeed on the job. Course content will include: communication and leadership skills; employee attitudes and safety awareness; personal safety procedures; workplace safety; tools for the job; basic rigging practices; and the wellness of the Millwright.

Prerequisite: Minimum reading score of 68 (Accuplacer) or 241 (Next Gen Accuplacer) OR minimum writing score of 64 (Accuplacer) or 226 (Next Gen Accuplacer) OR RD 080 OR RD 087 and EL 115R OR Prior College. Within the past 2 years, completed MTH020 or higher with a grade of "C-" or better or placed into MTH 075 through the Testing Office.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Demonstrate ability to interpret both verbal and written information and communicate effectively in on-the-job situations using both written and verbal skills
2. Demonstrate effective relationship skills with co-workers and supervisors, ability to work on a team, and perform appropriate leadership skills
3. Explain the role that safety plays in the millwright industry and describe the meaning of job-site safety, and demonstrate appropriate and safe workplace behavior
4. Understand and perform OSHA approved standards
5. Employ common safety practices; use different types of personal protective gear, and explain the appropriate safety precautions to take around common job-site hazards
6. Understand Lockout-tagout procedures
7. Explain the importance of the Hazard Communication Standard (HazCom) and Materials Data Sheets (MSDS's)
8. Recognize and identify some of the basic tools used in the millwright industry and follow the safety procedures for lifting heavy objects
9. Identify power tools commonly used in the millwright industry and safely use various hand and power tools
10. Identify and describe the use of slings and common rigging hardware
11. Describe the basic inspection techniques and rejection criteria used for slings and hardware; basic hitch configurations and their proper connections and basic load-handling safety practices

APR 151 - Millwright Machine Theory and Trade Calculations

5 Credit(s)

Designed for Oregon state-recognized apprentices employed in the millwright trade. Students will learn trade calculations as they pertain to the millwright industry. This course will provide students with hands-on experience using Mic's, calipers and various precision measuring equipment. Students will gain knowledge in the use of metal lathes, milling equipment, boring, keyway cutting, and other facets of machine work.

Prerequisite: Minimum reading score of 68 (Accuplacer) or 241 (Next Gen Accuplacer) OR minimum writing score of 64 (Accuplacer) or 226 (Next Gen Accuplacer) OR RD 080 OR RD 087 and EL 115R OR Prior College. Within the past 2 years, completed MTH 020 or higher with a grade of "C-" or better or placed into MTH 075 through the Testing Office.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Perform industrial calculations as related to millwright measurements and layout
2. Use fundamental layout
3. Understand metal machining vocabulary
4. Perform very basic lathe set-up
5. Demonstrate knowledge of precision measuring tools and how to read them

APR 152 - Millwright: Power Transmissions and Boilers-Steam

5 Credit(s)

Designed for Oregon state-recognized apprentices employed in the millwright industry. Course will provide students with an understanding of mechanical power train functions and what makes a mill operational such as: drives, clutches, brakes, and couplers (their functions, applications, and advantages/disadvantages). Students will learn all steam functions and the precautions necessary to be aware of during installations and repairs; the differences in fire tube and water tube systems; and all associated traps, valves, pumps, and reliefs. Discussions will include how they function and what can be serviced by Millwrights and what the requirements are for a steam specialist

Prerequisite: RD 087 AND EL 115 OR prior college or placement test and within the past 2 years, completed MTH 020 or higher with a grade of C- or better or placed into MTH 075 through the Testing Office.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Understand how to use lockout-tagout procedures.
2. Understand basic mechanical power train functions.
3. Gain knowledge in what makes a mill operational.

4. Describe the basic steam functions and necessary precautions and differences during repairs.

5. Understand what can be serviced by a millwright vs. a steam specialist.

APR 160 - Plumbing Skill Fundamentals

4 Credit(s)

Designed for Oregon state-registered apprentices employed in the plumbing trade. This course provides an introduction to the necessary skills required for the plumbing trade. Students will learn an overview of the plumbing trade and become familiar with employer expectations. General topics include: basic concepts in safety in the workplace, trade vocabulary, trade math-basic offsets, common tools and materials, plumbing drawings, and introductory overview of the Uniform Plumbing Code (UPC) with Oregon Amendments; administration, definitions and general regulations.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Demonstrate a working knowledge of the plumbing trade and employer expectations, and workplace responsibilities.
2. Demonstrate appropriate and safe workplace behavior, employ common safety practices, and use different types of personal protective equipment.
3. Identify and safely use and care for various plumbing hand and power tools, employ common safety practices, and use different types of protective gear.
4. Perform trade specific calculations with whole numbers, fractions, decimals, percentages, and ratios.
5. Calculate 45-degree offsets calculations.
6. Interpret drawings and measure pipe using fitting tables and framing squares.
7. Render accurate basic drawings showing layout and plumbing systems.
8. Use relevant plumbing definitions found in the Uniform Plumbing Code (UPC) and explain the purpose of ORS and OAR's in governance of licensure and plumbing regulations.

APR 160A - Plumbing Skill Fundamentals

2 Credit(s)

Designed for Oregon state-registered apprentices employed in the plumbing trade. This course provides an introduction to the necessary skills required for the plumbing trade. Students will learn an overview of the plumbing trade and become familiar with employer expectations. General topics include: basic concepts in safety in the workplace, trade vocabulary, trade math-basic offsets, common tools and materials, plumbing drawings, and introductory overview of the Uniform Plumbing Code (UPC) with Oregon Amendments; administration, definitions and general regulations.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Demonstrate a working knowledge of the plumbing trade and employer expectations, and workplace responsibilities
2. Demonstrate appropriate and safe workplace behavior, employ common safety practices, and use different types of personal protective equipment
3. Identify and safely use and care for various plumbing hand and power tools, employ common safety practices, and use different types of protective gear
4. Perform trade specific calculations with whole numbers, fractions, decimals, percentages, and ratios
5. Calculate 45-degree offsets calculations
6. Interpret drawings and measure pipe using fitting tables and framing squares
7. Render accurate basic drawings showing layout and plumbing systems. Use relevant plumbing definitions found in the Uniform Plumbing Code (UPC) and explain the purpose of ORS and OAR's in governance of licensure and plumbing regulations

APR 161 - Plumbing Materials and Fixtures

4 Credit(s)

Designed for Oregon state-registered apprentices employed in the plumbing trade. Introduces student to different types of pipe and fittings used in plumbing applications and reviews applicable safety and code requirements. Students will learn piping system components and the various connection and installation options. Course includes the proper applications of code-approved fixtures and faucets in plumbing installations. Math and science principles in completion of plumbing tasks will be included along with an introduction to tables in the Uniform Plumbing Code.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Demonstrate knowledge of different types of pipe and fittings such as plastic, copper, cast-iron, and carbon steel.
2. Demonstrate how to measure, cut, join, and support various pipes and fittings according to manufacturer's instructions and applicable codes.
3. Select plumbing fixtures, water heaters, and hot water systems based on desired results and related code.
4. Use proper applications of code-approved fixtures and faucets in plumbing installations and apply different types of fixtures and faucets and the materials used in them per UPC requirements.
5. Demonstrate competence in using basic math concepts in on-the-job plumbing situations.
6. Identify tables located in the Uniform Plumbing Code (UPC).
7. Apply the principles of science to applications in plumbing.
8. Demonstrate a basic understanding of the codes, definitions and responsibilities, as defined by the UPC.

APR 161A - Plumbing Materials and Fixtures

2 Credit(s)

Designed for Oregon state-registered apprentices employed in the plumbing trade. Introduces student to different types of pipe and fittings used in plumbing applications and reviews applicable safety and code requirements. Students will learn piping system components and the various connection and installation options. Course includes the proper applications of code-approved fixtures and faucets in plumbing installations. Math and science principles in completion of plumbing tasks will be included along with an introduction to tables in the Uniform Plumbing Code.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Demonstrate knowledge of different types of pipe and fittings such as plastic, copper, cast-iron, and carbon steel
2. Demonstrate how to measure, cut, join, and support various pipes and fittings according to manufacturer's instructions and applicable codes
3. Select plumbing fixtures, water heaters, and hot water systems based on desired results and related code
4. Use proper applications of code-approved fixtures and faucets in plumbing installations and apply different types of fixtures and faucets and the materials used in them per UPC requirements
5. Demonstrate competence in using basic math concepts in on-the-job plumbing situations
6. Identify tables located in the Uniform Plumbing Code (UPC)
7. Apply the principles of science to applications in plumbing.
8. Demonstrate a basic understand of the codes, definitions and responsibilities, as defined by the UPC

APR 162 - Plumbing Basic Waste Water Systems

2 Credit(s)

Designed for Oregon state-registered apprentices employed in the plumbing trade. Students will be introduced to the DWV systems, the characteristics of water, how to select proper water pipe size, and explain the principle of backflow prevention. Hot water heaters will be discussed along with hands-on troubleshooting of electric and gas water heaters. Uniform Plumbing Code compliance will also be discussed with reference to specific articles.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Explain DWV systems and how to remove waste safely and effectively.
2. Identify DWV piping materials.
3. Explain the characteristics of water.
4. Select proper water pipe sizing based on specification.
5. Select plumbing fixtures, water heaters, and hot water systems based on desired results and related code and explain how hot water heaters function.
6. Identify how system components work and apply drain and vent sizing, grade, and waste treatment.
7. Explain the major components of water distribution systems, their functions, and water sources and treatment methods.
8. Explain the characteristics and importance of backflow prevention.
9. Identify and apply articles in Uniform Plumbing Code.

APR 162A - Plumbing Basic Waste Water Systems

2 Credit(s)

Designed for Oregon state-registered apprentices employed in the plumbing trade.

Students will be introduced to the DWV systems, the characteristics of water, how to select proper water pipe size, and explain the principle of backflow prevention. Hot water heaters will be discussed along with hands-on troubleshooting of electric and gas water heaters. Uniform Plumbing Code compliance will also be discussed with reference to specific articles.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Explain DWV systems and how to remove waste safely and effectively
2. Identify DWV piping materials
3. Explain the characteristics of water.
4. Select proper water pipe sizing based on specification
5. Select plumbing fixtures, water heaters, and hot water systems based on desired results and related code and explain how hot water heaters function
6. Identify how system components work and apply drain and vent sizing, grade, and waste treatment
7. Explain the major components of water distribution systems, their functions, and water sources and treatment methods
8. Explain the characteristics and importance of backflow prevention
9. Identify and apply articles in Uniform Plumbing Code

APR 163 - Plumbing Calculations and Print Reading

4 Credit(s)

Designed for Oregon state-registered apprentices employed in the plumbing trade. This course reviews methods for finding angles using the Pythagorean Theorem. Students will interpret and use civil, architectural, structural, mechanical plumbing and electrical drawings when installing plumbing systems. Techniques to create isometric drawings, material takeoffs and approved submittal data using will be included. Methods are introduced for attaching and running DWV and water supply piping in relation to structural elements and code requirements.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Calculate 22-1/2-, 45-, 60-degree offsets, parallel offsets and determine square of a corner.
2. Draw simple and rolling offsets, as well as offsets on parallel runs of pipe.
3. Read and interpret building plans and drawings.
4. Create an isometric drawing and prepare elementary single-line sketches of drainage and vent systems.
5. Layout a building site including fixtures through building sewers including building the stack location.
6. Prepare a materials list for a drainage waste and vent system using approved submittal data.
7. Explain applications for installation of hangers, supports, and fire stopping for plumbing systems.
8. Install and test a DWV system using appropriate hangers and correct grade or slope.
9. Use proper techniques and equipment for locating, installing and connecting roof, floor and area drains according to code.

APR 163A - Plumbing Calculations and Print Reading

2 Credit(s)

Designed for Oregon state-registered apprentices employed in the plumbing trade. This course reviews methods for finding angles using the Pythagorean Theorem. Students will interpret and use civil, architectural, structural, mechanical plumbing and electrical drawings when installing plumbing systems. Techniques to create isometric drawings, material takeoffs and approved submittal data using will be included. Methods are introduced for attaching and running DWV and water supply piping in relation to structural elements and code requirements.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Calculate 22-1/2-, 45-, 60-degree offsets, parallel offsets and determine square of a corner
2. Draw simple and rolling offsets, as well as offsets on parallel runs of pipe
3. Read and interpret building plans and drawings
4. Create an isometric drawing and prepare elementary single-line sketches of drainage and vent systems
5. Layout a building site including fixtures through building sewers including building the stack location
6. Prepare a materials list for a drainage waste and vent system using approved submittal data
7. Explain applications for installation of hangers, supports, and fire stopping for plumbing systems

8. Install and test a DWV system using appropriate hangers and correct grade or slope
9. Use proper techniques and equipment for locating, installing and connecting roof, floor and area drains according to code

APR 164 - Plumbing Basic Installation 1

4 Credit(s)

Designed for Oregon state-registered apprentices employed in the plumbing trade. This course includes techniques for installation and testing of water supply piping and basic plumbing fixtures, valves, and faucets. An introduction to the principles of electricity common to plumbing-related electrical applications and review of proper installation and testing techniques and federal guidelines that apply to water heaters will also be discussed. Code requirements will be included for each section.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Identify various fixtures, valves, and faucets and their typical application.
2. Prepare elementary single-line sketches of drainage and vent systems.
3. Prepare drawings for both drainage and water piping systems using detailed symbols.
4. Develop a material takeoff from a given set of plans.
5. Use plans and fixture rough-in sheets to determine the location of fixtures and the route of the water supply piping.
6. Prepare take offs from plans, locate fixture route pipe, and locate and size water meters for installation of a water system.
7. Explain requirements and techniques necessary to modify structural members in plumbing installation.
8. Explain sizing and installation of a water service line, including back flow prevention, and proper testing of a water supply system.
9. Describe procedures required in safely installing and repairing bathtubs, shower stalls, valves, faucets, water closets, sinks, lavatories and urinals.
10. Identify circuit, voltage and Ohm's when using electrical testing equipment on electrical components used in plumbing equipment.

APR 164A - Plumbing Basic Installation 1

2 Credit(s)

Designed for Oregon state-registered apprentices employed in the plumbing trade. This course includes techniques for installation and testing of water supply piping and basic plumbing fixtures, valves, and faucets. An introduction to the principles of electricity common to plumbing-related electrical applications and review of proper installation and testing techniques and federal guidelines that apply to water heaters will also be discussed. Code requirements will be included for each section.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Identify various fixtures, valves, and faucets and their typical application
2. Prepare elementary single-line sketches of drainage and vent systems
3. Prepare drawings for both drainage and water piping systems using detailed symbols
4. Develop a material takeoff from a given set of plans
5. Use plans and fixture rough-in sheets to determine the location of fixtures and the route of the water supply piping
6. Prepare take offs from plans, locate fixture route pipe, and locate and size water meters for installation of a water system
7. Explain requirements and techniques necessary to modify structural members in plumbing installation
8. Explain sizing and installation of a water service line, including back flow prevention, and proper testing of a water supply system
9. Describe procedures required in safely installing and repairing bathtubs, shower stalls, valves, faucets, water closets, sinks, lavatories and urinals
10. Identify circuit, voltage and Ohm's when using electrical testing equipment on electrical components used in plumbing equipment

APR 165 - Plumbing Basic Installation 2

2 Credit(s)

Designed for Oregon state-registered apprentices employed in the plumbing trade. This course will include review of proper installation and testing techniques that apply to water heaters. Identification, troubleshooting and repair of water heaters, fixtures, valves, and faucets will also be included along with federal guidelines. Code requirements will be included for each section.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Identify and explain the functions of the basic components of water heaters.
2. Install both an electric and gas water heater and describe the safety hazards associated with both.
3. Identify the major components of the following fuel systems and describe the function of each component: natural gas, LP gas (liquefied petroleum gas), and fuel oil.
4. Demonstrate familiarity with applicable fuel gas codes.
5. Identify the proper procedures for repairing and maintaining fixtures, valves, and faucets.
6. Relate the provisions of the UPC to all types of plumbing installations.

APR 165A - Plumbing Basic Installation 2

2 Credit(s)

Designed for Oregon state-registered apprentices employed in the plumbing trade. This course will include review of proper installation and testing techniques that apply to water heaters. Identification, troubleshooting and repair of water heaters, fixtures, valves, and faucets will also be included along with federal guidelines. Code requirements will be included for each section.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Identify and explain the functions of the basic components of water heaters
2. Install both an electric and gas water heater and describe the safety hazards associated with both
3. Identify the major components of the following fuel systems and describe the function of each component: natural gas, LP gas (liquefied petroleum gas), and fuel oil
4. Demonstrate familiarity with applicable fuel gas codes
5. Identify the proper procedures for repairing and maintaining fixtures, valves, and faucets
6. Relate the provisions of the UPC to all types of plumbing installations

APR 170 - Introduction to Sheet Metal Apprenticeship

4 Credit(s)

Designed for Oregon state-recognized apprentices employed in the sheet metal trade. The course content will include introduction to the sheet metal trade, trade terminology, safe working habits, and basic tools and equipment for forming and installing sheet metal air ducting. Students will obtain a basic understanding of duct layout principles.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Demonstrate knowledge of the opportunities in the sheet metal trade.
2. Understand basic safety and terminology in the sheet metal trade.
3. Identify the tools and machinery used in the sheet metal trade.
4. Identify different types of sheet metal, material, and fasteners common to the sheet metal trade.
5. Demonstrate how to use patterns, draw for pattern drafting, and cut sheet metal.
6. Demonstrate how to punch, drill and rivet sheet metal; fold edges and make seams.
7. Understand turning, burring, and raising sheet metal as well as forming, crimping, beading, and grooving sheet metal.
8. Understand parallel line development and radial line development.
9. Identify how sheet metal is used in the building trade.

APR 171 - Sheet Metal Basic Layout

4 Credit(s)

Designed for state-recognized apprentices employed in the sheet metal trade. Course is an introduction to shop equipment and safety; and shop hand tools required for the course. Students will gain knowledge in sheet metal working drawings and blueprints. General topics include: basic layout, techniques, and modification of duct work and fittings.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Identify shop equipment and understand basic safety in the sheet metal shop.
2. Begin to read, interpret, and visualize sheet metal working drawings and blueprints.
3. Differentiate between the three different types of layout and employ these techniques in making duct fittings.
4. Recall proper allowances needed to complete fabrication and repeat the proper order in which fittings are laid out.

5. Deduce and illustrate proper cut sheets and working view of fittings.
6. Label the ductwork properly.
7. Modify existing duct work to fit a given situation.

APR 173 - Sheet Metal Formulas

4 Credit(s)

Covers fractions and decimals, geometric shapes, equation solutions, ratios and proportions, perimeters, areas, and volumes of geometric shapes; powers; and, use of the scientific calculator. Emphasis is on applications to applied sheet metal fabricators.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Calculate elementary algebraic equations and formulas
2. Apply appropriate formulas to mathematical situations
3. Be familiar with basic geometric shapes
4. Solve equations involving addition, subtraction, multiplication, and division
5. Solve problems involving ratios and proportions
6. Determine the perimeter of geometric shapes and circumference of a circle
7. Determine the area and volume of geometric shapes
8. Use trigonometric sine, cosine, and tangent functions to find right triangle sides and angles

APR 185 - Shielded Metal Arc Welding 1

1-4 Credit(s)

Skill development in SMAW, oxy-acetylene cutting, understanding and practicing safe work methods in the welding shop and welding in all positions (flat, horizontal, overhead, and vertical), using the shielded metal arc process.

Prerequisite: RD 087 AND EL 115 OR prior college or placement test.

Learning Outcomes

Upon completion of this course, the successful student will be able to:

1. Perform welding in a manner that demonstrates concern for safety and welfare for self, others and property
2. Cut steel to project dimensions using manual oxyacetylene cutting torch
3. Metallic arc weld in the four standard positions: (flat, horizontal, overhead, and vertical) on all assigned projects

APR 186 - Wire Drive Welding 1

1-4 Credit(s)

Skills development in gas metal arc welding (GMAW) of carbon steel. Students will be instructed in proper care, set-up and use of GMAW equipment. Preparing weld test specimens and performing weld tests is included in this course.

Prerequisite: RD 087 AND EL 115 OR prior college or placement test.

Learning Outcomes

Upon completion of this course, the successful student will be able to:

1. Set GMAW machine controls to effect short arc, spray arc and pulsed arc metal transfer while using solid wire of various sizes
2. Select and properly connect to a GMAW power source appropriate shielding gases necessary to short arc and spray arc metal transfer
3. Prepare typical industrial weld joints, make welds on these joints in the four standard positions, and perform destructive and non-destructive tests on those weldments
4. Prepare materials, outline testing procedures, make welds, prepare test specimens, and execute testing procedures consistent with certain pre-qualified American Welding Society code tests
5. Identify the type, cause, and solution to weld defects typically associated with GMAW short arc, spray arc and pulsed arc metal transfer
6. Perform minor maintenance on GMAW equipment associated with contact tip, liner and drive rolls

APR 187 - Fundamentals of Metallurgy

1-3 Credit(s)

Physical, chemical and mechanical nature of carbon and alloy steels. Includes study of the purpose and practice of various thermal treatments and cold working processes common to metal using industries.

Prerequisite: RD 087 AND EL 115 OR prior college or placement test.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Identify various types of the more common commercial metals by two or more methods.
2. Describe the basic atomic and crystalline structure of metals.
3. Describe at least five mechanical, physical, and chemical properties of metals.
4. Describe the effects of alloying elements.

5. Perform the heat-treating processes of annealing, normalizing, quench hardening, tempering, stress relieving and other metal working processes.
6. Explain the effects of expansion and contraction during temperature changes in structural shapes, fabricated frames and machinery.
7. Determine the weld ability of various metals and describe an appropriate welding procedure and process for those metals.
8. Demonstrate or describe processes and applicability of preheating and post heating for various metals.
9. Describe fluxes, slags, and shielding gases and their effects on weldments.

APR 189 - Shop Practices

2 Credit(s)

This first year course in electronics technology addresses the general lab skills and knowledge required to function safely and effectively in an electronics laboratory or shop environment. The student will be introduced to concepts in electronic circuit assembly, wire termination, and soldering. Included is an overview of electrical schematics and diagrams used in the design, assembly, and repair of electrical and electronic systems. The proper use of common lab equipment and hand tools will be covered. This is a hands-on course intended to give the student experience performing tasks that are best taught by practice. Throughout the course the underlying theme is on work site safety and the ability to follow directions.

Prerequisite: RD 087 AND EL 115 OR prior college OR placement test.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Understand the principles of shop safety.
2. Be skilled in basic soldering/de-soldering techniques.
3. Have knowledge of electrical diagrams and schematics.
4. Have knowledge of the techniques required for proper wire termination.
5. Have a basic proficiency in the use of common electronics lab equipment and hand tools.

APR 190 - Electrical Theory 1

1-4 Credit(s)

First course of a two-term sequence in electrical theory. The first term defines the basic electrical units, the basic laws of electrical theory as they apply to DC circuits such as series, parallel, and series-parallel circuits. AC waveforms and AC circuit components are introduced. Electronic test equipment such as the digital multimeter, oscilloscope and function generators are used to measure electrical signals and troubleshoot basic electrical circuits.

Prerequisite: RD 087 AND EL 115 OR prior college AND MTH 060 OR higher with a letter grade of C- or better, OR placement

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Read resistor color codes
2. Measure voltage, current, and resistance
3. Knowledge of DC series-parallel circuit characteristics
4. Understand basic AC circuits and use of the oscilloscope

APR 191 - Electrical Theory 2

1-4 Credit(s)

Second course of a two-term sequence in electrical theory. This course covers basic AC circuits and components, right triangle mathematics, RLC circuits, filters, and resonant circuits and RL/RC transient circuits. In the lab students will build and troubleshoot basic AC circuits using the oscilloscope, function generator, and DMM.

Prerequisite: ET 129 OR APR 190

Learning Outcomes

Upon completion of this course, the successful student will be able to:

1. Effectively use mathematical skills to perform calculations common to the electrical trades
2. Identify different types of capacitors and inductors, read their values from different types of identification codes and know how to test them with various types of measuring equipment
3. Define the units of capacitance and inductance and explain how these devices charge and discharge in RC and RL circuits
4. Calculate the total value of capacitors that are connected in series and/or parallel
5. Identify high pass, low pass, band pass and notch filters
6. Identify dot polarities to determine the phase difference between the primary and secondary sides of a transformer

7. Recognize the basic types of common transformers and perform power, voltage and current calculations on both the primary and secondary sides of the transformer
8. Perform AC reactance calculations for capacitors and inductors
9. Demonstrate a working knowledge of trigonometry in the study of AC reactive components and their phase angles
10. Analyze RC, RL and RLC circuits for individual currents, voltage and power drops and perform accurate impedance calculations for these circuits
11. Contrast the differences between parallel and series RLC circuits in AC applications
12. Based on component values, calculate a circuit's resonant frequency, half power points, Q and bandwidth
13. Explain the characteristics of a resonant circuit as it relates to power factors and the transfer of information
14. Demonstrate a working knowledge of the oscilloscope as a tool to analyze voltage, frequency and phase differences in complex AC circuits
15. Communicate effectively with others in a technical manner using specific nomenclature in the proper context

APR 201 - Carpentry Basic Rigging and Practices

3 Credit(s)

Designed for Oregon state-recognized apprentices employed in the carpentry trade. The curriculum is competency-based and modular in format. This course introduces students to the basic equipment and hardware used in rigging. An overview of personnel lifting, lift planning and crane load charts will also be introduced along with handling and placing of concrete and the preparing of the student for working in and around excavations.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Select, inspect, use, and maintain special rigging equipment including block and tackle, chain hoists, come-alongs, jacks, and tuggers (27301-07).
2. Tie knots used in rigging (27301-07).
3. Interpret a load chart (27302-07).
4. Use and interpret hand signals (27302-07).
5. Identify requirements for an engineered lift (27302-07).
6. Identify special types of concrete and describe their uses (27303-07).
7. Calculate concrete volume requirements for rectangular, cylindrical, or other geometric structures using formulas, concrete tables, and /or concrete calculators, as applicable (27303-07).
8. Identify concrete testing methods (27303-07).
9. Identify ways to increase soil density (27306-07).
10. Explain the purpose of soil density (compactions) (27306-07).
11. Explain the safety considerations for trenches and deep excavations (27306-07).

APR 202 - Carpentry Concrete Practices

3 Credit(s)

Designed for Oregon state-recognized apprentices employed in the carpentry trade. The curriculum is competency-based and modular in format. This course introduces students to different types of reinforcing materials, including cutting, bending and splicing, concrete joint sealants, and form removal procedures. In addition, students will learn procedures and techniques for both deep and shallow foundations, as well as those required for slab-on-grade concrete work.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Recognize and identify the bar bends standardized by the American Concrete Institution (ACI) (27304-07).
2. Safely use selected tools and equipment to cut, bend, and install reinforcing materials (27304-07).
3. Describe the factors that contribute to the quality of concrete placement (27305-07).
4. Name the factors that affect the curing of concrete and describe the methods used to achieve proper curing (27305-07).
5. Identify various types of footing and foundations (27307-07).
6. Install templates, keyways, and embedment's (27307-07).
7. Identify the different classes of slabs-on-grade (27307-07).
8. Identify edge forms and explain their purpose (27307-07).
9. Establish finish grade and fill requirements (27307-07).

APR 203 - Carpentry Forms and Tilt-up Panels

3 Credit(s)

Designed for Oregon state-recognized apprentices employed in the carpentry trade. The curriculum is competency-based and modular in format. This course introduces students to the applications and construction methods for various types of forming and form hardware systems utilized in both vertical and horizontal concrete formwork. Students will also learn the methods and materials utilized in the construction of tilt-up wall panels, including forming, rebar, and embedments, as well as architectural and decorative finishes.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Explain safety procedures associated with using concrete wall forms (27308-07).
2. Recognize various types of manufactured forms (27308-07).
3. Locate and install bulkheads and embedded forms (27308-07).
4. Identify the safety hazards associated with elevated deck formwork and explain how to eliminate them (27309-07).
5. Identify the different types of elevated decks, flying and handset form systems (27309-07).
6. Identify typical bridge and culvert form systems (27309-07).
7. Explain the importance of the casting bed (27310-07).
8. Identify the special rigging requirements for tilt-up wall panels (27310-07).
9. Identify the different methods of forming tilt-up wall panels (27310-07).
10. Describe the final grouting procedure (27310-07).

APR 204 - Carpentry Advanced Layout and Building Systems

3 Credit(s)

Designed for Oregon state-recognized apprentices employed in the carpentry trade. The curriculum is competency-based and modular in format. This course introduces students to the equipment, layout and methods to perform distance measurement and leveling. Students will also learn the structures, materials and procedures for installing commercial roofing, as well as the varieties of, and installation procedures for commercial wall systems.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Use manual or electronic equipment and procedures to make distant measurements and perform site layout tasks (27401-08).
2. Use a builder's level and differential leveling procedures to determine site and building elevations (27401-08).
3. Record site layout data and information in field notes using accepted practices (27401-08).
4. Check and /or establish 90-degree angles using the 3-4-5 rule (27401-08).
5. Explain the different types of roof systems (27403-08).
6. Identify various advanced roof systems and explain the techniques used in their construction (27403-08).
7. Explain the different types of wall systems (27404-08).
8. Identify various advanced wall systems and explain the techniques used in their construction (27404-08).

APR 205 - Carpentry Advanced Planning and Management

3 Credit(s)

Designed for Oregon state-recognized apprentices employed in the carpentry trade. The curriculum is competency-based and modular in format. This course introduces students to welding equipment, procedures and safety, specialized interior and exterior finish materials, and the construction planning process. Management topics are also discussed, specifically, scheduling, estimating, and supervisory skills.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Explain the meaning of the terms backfire and flashback, describe how to avoid them, and what to do if they occur (27407-08).
2. Under the supervision of the instructor, demonstrate the ability to set up equipment for oxyfuel cutting; turn on, light; and adjust the equipment to obtain a neutral flame; cut mild steel; and stop and restart the cut (27407-08).
3. Describe the characteristics of a good weld (27407-08).
4. Identify materials and methods used to finish the interior of commercial buildings (27408-08).
5. Identify materials and methods used to finish the exterior of commercial buildings (27408-08).
6. Identify items that need to be addressed in the site utilization plan (27409-08).

7. List items that need to be addressed in the site utilization plan (27409-08).
8. Identify methods used to mitigate water problems at a work site (27409-08).
9. Understand and incorporate leadership skills into work habits including: communication, motivation, team building, problem solving, and decision-making skills (27410-08).
10. Demonstrate an awareness of safety issues, including the cost of accidents and safety regulations (27410-08).
11. Understand the planning process, scheduling, and cost and resource control (27410-08).

APR 206 - Carpentry Equipment and Site Layout

3 Credit(s)

Designed for Oregon state-recognized apprentices employed in the carpentry trade. The curriculum is competency-based and modular in format. This course introduces students to various pieces of light construction equipment commonly used at construction sites. Students will also learn the principles, equipment, and methods used to perform site layout tasks that require making angular measurements and provide extensive coverage of the materials and techniques used in finishing wooden staircases.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Identify and explain the operation and use of various pieces of light equipment, including aerial lifts, skid steer loaders, trenchers, generators, compressors, compactors, forklifts, and backhoes (27406-08).
2. Explain the safety precautions associated with light equipment (27406-08).
3. Perform calculations pertaining to angular measurements for commercial construction applications (27402-08).
4. Use trigonometric leveling techniques to determine unknown elevations for construction site applications (27402-08).
5. Explain and demonstrate the procedure for cutting and installing various stair parts (27405-08).
6. Describe the method for finishing service stairs and main stairs, and demonstrate instructor selected finishing for one or more of the following: open, closed, combination open/closed, L-shaped, U-shaped (27405-08).
7. Identify what materials can be used to build stairs for commercial construction (27405-08).

APR 210 - HVAC Systems 1

4 Credit(s)

This is the first course of a four term sequence in HVAC theory and application. This first term identifies basic systems common to this industry with emphasis on specialized control systems, including HVAC, boiler, clock and instrumentation. In addition, concepts in geothermal technologies will be explored. This class is designed for Oregon state-recognized apprentices working in the HVAC/R trade.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Demonstrate knowledge of low voltage structure wiring system design and installation.
2. Identify basic electronic components used in limited energy installations.
3. Demonstrate basic knowledge of specialized control systems, including HVAC, boiler, clock, and instrumentation control systems.
4. Identify and troubleshoot controls for common heating and cooling systems including air conditioning, heat systems, and refrigeration and ventilation systems.
5. Explain differences between 80% and 90% gas furnace systems and the controls used in those systems.
6. Describe geothermal technologies as they apply to modern HVAC systems.

APR 211 - HVAC Systems 2

4 Credit(s)

This is the second course of a four term sequence in HVAC theory and application. Course focuses on the design of HVAC residential and commercial systems. Emphasis will be placed on the 'sizing' of HVAC systems for specific applications. In addition, soldering and brazing will be covered, along with techniques of fusing copper, brass, and plastic. This class is designed for Oregon state-recognized apprentices employed in the HVAC/R trade.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Perform heat loss and gain calculations.
2. Properly design mechanical duct systems.
3. Select proper tools and equipment for HVAC/R installations.
4. Demonstrate proper brazing and soldering techniques.

5. Use techniques and materials required for the proper fusion of plastic pipes.

APR 212 - HVAC Systems 3

4 Credit(s)

This is the third course of a four term sequence in HVAC theory and application.

This course covers operational characteristics, service, and maintenance of gas, water, oil, air, vacuum pumps, and compressors. Students will learn how to troubleshoot mechanical problems, pneumatic controls and control valve components and perform heat pump installation. This class is designed for Oregon state-recognized apprentices working in the HVAC/R trade.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Identify safety rules and precautions for troubleshooting problem associated with pumps, compressors and their systems.
2. Explain how vacuum, oil and gas pumps operate and perform the various types of tests common to those pumps.
3. Identify how water pumps operate (shallow well pump) (deep well pump); know how to measure flow, pressure and perform maintenance and efficiency test on personal well water system.
4. Explain how air compressors work and how they are tested.
5. Identify, troubleshoot, and install various types of pumps, controls, valves, and piping.

APR 213 - HVAC Systems 4

4 Credit(s)

This is the fourth course of a four-term sequence in HVAC theory and application.

This class identifies basic systems common to this industry with emphasis on water treatment, indoor air quality, building management, system design, air balancing, and commercial and industrial refrigeration. In addition, concepts in alternative and specialized heating and cooling systems, as well as crew leadership are explored. This class is designed for Oregon state-recognized apprentices working in the HVAC/R trade.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Demonstrate knowledge of basic water system application including analysis and treatment as it pertains to HVAC systems
2. Demonstrate knowledge of basic indoor air quality and how to comply with established Indoor Air Quality (IAQ) standards
3. Demonstrate knowledge of residential and commercial energy conservation scenarios, and the relationship of commercial energy conservation and building management systems
4. Demonstrate knowledge of basic heating and cooling system design and air balancing
5. Identify and troubleshoot basic commercial refrigeration systems and alternative and specialized heating and cooling systems
6. Describe basic fundamentals of crew leadership

APR 220 - Electrical Apprenticeship Code and Exam Preparation

2-3 Credit(s)

Designed for Oregon state-recognized apprentices employed in a trade or industry related occupation. This course is designed to instruct students in techniques for interpreting and understanding the National Electrical Code (NEC). Students will participate in practice exams to illustrate the development and layout of the NEC. APR 220 is presented in 2 or 3 credit blocks preparing students for the electrical licensing examination administered by the State of Oregon Building Codes Division.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Perform various code calculations
2. Reference and cite articles in the NEC
3. Interpret NEC articles as they apply to the construction trades
4. Understand legal and safety aspects of electrical installations
5. Identify the uses of various types of equipment as referenced in the NEC
6. Understand the principles and practices used by the various electrical trades
7. Identify and use reference material useful in helping with code interpretation
8. Be aware of test strategies designed to increase the "odds" of attaining a better test score
9. Be prepared to take the code test required by each student's discipline in order to attain an Oregon Journey Card

APR 225 - Electrical Motor Controls

5 Credit(s)

Designed for Oregon state-recognized apprentices employed in a trade or industry-related occupation. This is the first term of the third year of the general journeyman inside wire electrician Apprenticeship related training. This course will provide students with an introduction into motor controls, contactor, aux contactors, relays, relay logic, and basic human/machine interface.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Understand and wire controls for motors, starters, VFD's, and the associated push-buttons and control devices.
2. Understand and demonstrate the safety practices for equipment safety and lockout techniques.
3. Demonstrate a working knowledge of the National Electrical Code.

APR 225A - Electrical Motor Controls

4 Credit(s)

Designed for Oregon state-recognized apprentices employed in a trade or industry-related occupation. This is the first term of the third year of the general journeyman inside wire electrician Apprenticeship related training. This course will provide students with an introduction into motor controls, contactor, aux contactors, relays, relay logic, and basic human/machine interface.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Understand and wire controls for motors, starters, VFD's, and the associated push-buttons and control devices
2. Understand and demonstrate the safety practices for equipment safety and lockout techniques
3. Demonstrate a working knowledge of the National Electrical Code

APR 226 - Electrical Grounding/Bonding and Blueprint Reading

5 Credit(s)

Designed for Oregon state-recognized apprentices employed in a trade or industry-related occupation. This course is the second term of the third year of general journeyman inside wire electrician Apprenticeship related training. General topics include safety/electrical safety, electrical theory, electrical math, grounding and bonding fundamentals, blueprint reading and sketching, and basic electrical design.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Understand how to interpret electrical prints and specifications
2. Understand basic blueprint reading concepts
3. Demonstrate a working knowledge of Construction Specifications and documentation
4. Demonstrate a base knowledge of electrical safety
5. Perform load calculations for residential and multi-family, commercial and industrial electrical projects
6. Perform ground and phase fault calculations as well as power calculations for various types of electrical loads
7. Understand the NEC code requirements for grounding and bonding
8. Effectively use common electrical calculations to solve for wiring requirements
9. Demonstrate a knowledge of electrical theory including; atomic theory, electron principles, magnetism, generators, A/C and D/C theory, resistance, Ohm's law, series and parallel circuits, voltage and amperage
10. Demonstrate a base understanding of the Grounding and Bonding Principles
11. Demonstrate a working knowledge of the National Electrical Code

APR 226A - Electrical Grounding/Bonding and Blueprint Reading

4 Credit(s)

Designed for Oregon state-recognized apprentices employed in a trade or industry-related occupation. This course is the second term of the third year of general journeyman inside wire electrician Apprenticeship related training. General topics include safety/electrical safety, electrical theory, electrical math, grounding and bonding fundamentals, blueprint reading and sketching, and basic electrical design.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Understand how to interpret electrical prints and specifications
2. Understand basic blueprint reading concepts
3. Demonstrate a working knowledge of Construction Specifications and documentation

4. Demonstrate a base knowledge of electrical safety
5. Perform load calculations for residential and multi-family, commercial and industrial electrical projects
6. Perform ground and phase fault calculations as well as power calculations for various types of electrical loads
7. Understand the NEC 2004 code requirements for grounding and bonding
8. Effectively use common electrical calculations to solve for wiring requirements
9. Demonstrate a knowledge of electrical theory including; atomic theory, electron principles, magnetism, generators, A/C and D/C theory, resistance, Ohm's law, series and parallel circuits, voltage and amperage
10. Demonstrate a base understanding of the Grounding and Bonding Principles
11. Demonstrate a working knowledge of the National Electrical Code

APR 227 - Electrical System Troubleshooting

3 Credit(s)

Designed for Oregon state-recognized apprentices employed in a trade or industry-related occupation. Course will include hands-on training to introduce students to concepts of electrical systems troubleshooting. Students will identify faults using digital multi-meters and troubleshooting concepts.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Demonstrate proper motor and transformer installations and troubleshooting technique
2. Employ common safety practices; use different types of personal protective gear, and Lock-out / Tag-out techniques
3. Demonstrate understanding of lighting techniques
4. Demonstrate a basic understanding of low voltage and Telecomm theory and application
5. Demonstrate troubleshooting techniques involved with electric motor control; start/stop, contactors, proximity switches, starters, and reversing circuits
6. Demonstrate a working knowledge of the National Electrical Code

APR 240 - Audio and Intrusion Systems

4 Credit(s)

Designed for Oregon state-recognized apprentices employed in a trade or industry-related occupation. This course explores the theory and safety practices employed in audio and intrusion detection systems along with the NEC codes that regulate their use and installation. Students learn basic theory, vocabulary and safety practices common to alarm systems.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Calculate the power required for an alarm system.
2. Explain alarm installation guidelines and safety procedures.
3. Identify components used in fire alarm and security systems.
4. Identify various techniques used in "protective signaling" system installations.
5. Reference various NEC articles as they apply to emergency call systems.

APR 240I - Industrial Instrumentation Technician Process Mathematics and Tubing

4 Credit(s)

Designed for Oregon state-recognized apprentices employed in a trade or industry-related occupation. This course explores the theory and safety practices employed in fire alarm and intrusion detection systems along with the NEC codes that regulate their use and installation. Students learn basic theory, vocabulary and safety practices common to alarm systems.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Calculate the power required for an alarm system.
2. Explain alarm installation guidelines and safety procedures.
3. Identify components used in fire alarm and security systems.
4. Identify various techniques used in "protective signaling" system installations.
5. Reference various NEC articles as they apply to emergency call systems.

APR 241 - Fire Alarm Systems and Nurse Call

4 Credit(s)

Designed for Oregon state-recognized apprentices employed in a trade or industry-related occupation. This course explores the theory and safety practices employed in audio, nurse call, CCTV and Broadband systems along with the NEC codes that regulate their use and installation. Students will gain knowledge consisting of the basic theory, vocabulary and safety practices common to audio and nurse call systems.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Calculate the power required for an audio system.
2. Describe methods and equipment used in nurse call system installations.
3. Identify acceptable signal levels for broadband systems.
4. Explain the use of common CCTV equipment.
5. Identify various types of components used in camera systems.
6. Reference various NEC articles as they apply to broadband systems.

APR 241I - Industrial Instrumentation Technician Drawings, Conductors, Terminations and Splices

4 Credit(s)

Designed for Oregon state-recognized apprentices employed in a trade or industry-related occupation. This course explores the theory and safety practices employed in audio, nurse call, CCTV and Broadband systems along with the NEC codes that regulate their use and installation. Students will gain knowledge consisting of the basic theory, vocabulary and safety practices common to audio and nurse call systems.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Calculate the power required for an audio system.
2. Describe methods and equipment used in nurse call system installations.
3. Identify acceptable signal levels for broadband systems.
4. Explain the use of common CCTV equipment.
5. Identify various types of components used in camera systems.
6. Reference various NEC articles as they apply to broadband systems.

APR 242 - Limited Voltage System Integration

4 Credit(s)

Designed for Oregon state-recognized apprentices employed in a trade or industry-related occupation. This course explores the theory and safety practices employed in access control systems and media management systems along with methods of system integration and user training. Students will learn a knowledge base consisting of the basic theory, vocabulary and safety practices common to control and media management systems, and systems integration.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Describe the connection of two or more stand-alone systems together.
2. Identify the use of media types for analog and digital platforms.
3. Identify the various types of components used in access control systems.
4. Reference various NEC articles as they apply to system installations.

APR 242I - Industrial Instrumentation Technician E, Electronic Components, Drawings and Motor Controls

4 Credit(s)

Designed for Oregon state-recognized apprentices employed in a trade or industry-related occupation. This course explores the theory and safety practices employed in access control systems and media management systems along with methods of system integration and user training. Students will learn a knowledge base consisting of the basic theory, vocabulary and safety practices common to control and media management systems, and systems integration.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Describe the connection of two or more stand-alone systems together.
2. Identify the use of media types for analog and digital platforms.
3. Identify the various types of components used in access control systems.
4. Reference various NEC articles as they apply to system installations.

APR 245I - Industrial Instrumentation Technician Distribution, Transformers and Conductor Selection

4 Credit(s)

Designed for Oregon state-recognized apprentices employed in a trade or industry-related occupation. This course explores control elements, transducers, and transmitters commonly used in process control. Students will learn a knowledge base consisting of the basic theory, vocabulary, and safety practices commonly used in process-control systems.

Learning Outcomes

Upon completion of this course, the successful student will be able to:

1. Explain distribution equipment including grounding, switchboard and ground fault maintenance and transformers.
2. Identify electrical drawing symbols.

3. Discuss transformer types, construction, connections, protection, and grounding.
4. Understand how capacitors and rectifiers are used in transformer application.
5. Describe the types of conductors used in wiring systems.
6. Explain the relationship between insulation, current-carrying capacity, and temperature ratings.

APR 250 - Millwright: Industrial Print Reading, Schematics, and Estimating 5 Credit(s)

Designed for Oregon state-recognized apprentices employed in the millwright industry. Course will include a review of orthographic projection, isometric, and schematic drawings used to show piping, hydraulic, and pneumatic systems, industrial automation, and conveyer system. Discussion and lab work will include an overview of several types of prints, their symbols and abbreviations, the components that make up a print and the various lines used within them. Students will practice take-offs and bid proposals by using various sets of industrial prints to provide cost estimations.

Prerequisite: Minimum reading score of 68 (Accuplacer) or 241 (Next Gen Accuplacer) OR minimum writing score of 64 (Accuplacer) or 226 (Next Gen Accuplacer) OR RD 080 OR RD 087 And EL 115R OR Prior College. Within the past 2 years, completed MTH 020 or higher with a grade of "C-" or better or placed into MTH 075 through the Testing Office.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Understand the measurements, components, and key elements of an industrial blueprint
2. Identify symbols unique to various types of blueprints and schematics
3. Develop and estimate material requirements and an accurate material list for a given job
4. Ability to sketch a schematic
5. Understand legality of prints
6. Perform basic job cost analysis and estimating
7. Understand the use of industrial blueprints in estimating job cost and take-offs
8. Understand industrial automation techniques
9. Perform calculations based on blueprint scales and elevations

APR 251 - Millwright: Pneumatics and Lubrications

5 Credit(s)

Designed for Oregon state-recognized apprentices employed in the millwright industry. This course is a comprehensive view of pneumatics where power is derived from the use of a gas, usually air. Topics will include pneumatic applications that require quick response, low and moderate precision, lower power and light to moderate load capacity requirements and the similarities and differences that pneumatics share with hydraulics. An overview of the special requirements of lubes and lubrication systems will be examined along with the various shapes and construction of bearings; their applications and specifications.

Prerequisite: Minimum reading score of 68 (Accuplacer) or 241 (Next Gen Accuplacer) OR minimum writing score of 64 (Accuplacer) or 226 (Next Gen Accuplacer) OR RD 080 OR RD 087 And EL 115R OR Prior College. Within the past 2 years, completed MTH 020 or higher with a grade of "C-" or better or placed into MTH 075 through the Testing Office.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Demonstrate knowledge of lockout-tagout procedures
2. Demonstrate knowledge with pneumatic components; how they work; and their use in a system
3. Sketch out a system and troubleshoot other systems
4. Gain knowledge of the fundamentals and limitations of pneumatic systems and how to work on them safely
5. Identify a comprehensive view of bearings; gain knowledge in the ability to understand why they failed; and examine how to prevent future failures
6. Understand the different forms of alignment along with the many part numbers and codes
7. Examine the special needs of lubes and lubrication systems and conveyer systems

APR 252 - Hydraulics for Millwrights

5 Credit(s)

Designed for Oregon state-recognized apprentices employed in the millwright industry. Students will gain an understanding of the functions of today's hydraulic systems and components, components specification for certain applications, and theory and formulas for verifying these results. Students will perform hands-on review and troubleshooting of components, such as fluids, valves, pumps and motors.

Prerequisite: Minimum reading score of 68 (Accuplacer) or 241 (Next Gen Accuplacer) OR minimum writing score of 64 (Accuplacer) or 226 (Next Gen Accuplacer) OR RD 080 OR RD 087 and EL 115R OR Prior College. Within the past 2 years, completed MTH 020 or higher with a grade of "C-" or better or placed into MTH 075 through the Testing Office.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Use Lockout-tagout procedures
2. Read and understand hydraulic schematics
3. Describe basic functions
4. Identify components
5. Troubleshoot basic system functions
6. Perform minor repairs and P.M.

APR 253 - Millwright Piping Systems

5 Credit(s)

Designed for Oregon state-recognized apprentices employed in the millwright industry. This course is an overview of piping systems and various types of pipe that contribute to each type of system. Students will learn construction piping systems along with ancillary components and how they differ. The course will also cover schematics for piping systems and methods of clamping, hanging and supporting them. Tube bending and how to make it fit and look good will also be discussed.

Prerequisite: Minimum reading score of 68 (Accuplacer) or 241 (Next Gen Accuplacer) OR minimum writing score of 64 (Accuplacer) or 226 (Next Gen Accuplacer) OR RD 080 OR RD 087 and EL 115R OR Prior College. Within the past 2 years, completed MTH 020 or higher with a grade of "C-" or better or placed into MTH 075 through the Testing Office.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Sketch and read piping schematics
2. Recognize piping systems and tools and how to fit them together
3. Determine what type of piping system and piping tooling is required
4. Describe different methods of connecting piping systems
5. Identify the standards for coloring and labeling
6. Describe and identify ancillary components and how they differ
7. Develop a good piping system using the methods of clamping, hanging, and supporting them
8. Identify soft and/or flexible connections
9. Gain a working knowledge of tube bending, pipe bending and flaring equipment

APR 254I - Industrial Instrumentation Technician Grounding Installation and Bending of Conduit

4 Credit(s)

Designed for Oregon state-recognized apprentices employed in a trade or industry-related occupation. This course explores control elements, transducers, and transmitters commonly used in process control. Students will learn a knowledge base consisting of the basic theory, vocabulary, and safety practices commonly used in process-control systems.

Learning Outcomes

Upon completion of this course, the successful student will be able to:

1. Discuss the methods used to eliminate or reduce electrical shock hazards.
2. Demonstrate knowledge of piping and tubing layout procedures.
3. Explain the steps in creating a hand-sketched isometric drawing.
4. Understand methods and procedures used to measure, cut, bend, and support piping and tubing.
5. Perform bends in conduit up to six inches.
6. Demonstrate knowledge of mechanical, hydraulic, and electrical benders.

APR 255I - Industrial Instrumentation Technician Fluid Controls and Motor Operated Valves

4 Credit(s)

Designed for Oregon state-recognized apprentices employed in a trade or

industry-related occupation. This course explores control elements, transducers, and transmitters commonly used in process control. Students will learn a knowledge base consisting of the basic theory, vocabulary, and safety practices commonly used in process-control systems.

Learning Outcomes

Upon completion of this course, the successful student will be able to:

1. Discuss the principals of hydraulic devices and controls.
2. Safely troubleshoot a hydraulic system.
3. Understand the principles of atmospheric and compressed air gases.
4. Address the functions and control of pneumatic system components and provide guidelines for troubleshooting.
5. Troubleshoot motor-driven valves.
6. Explain the operation of servo-mechanical actuators

APR 260 - Plumbing Water Supply Systems

4 Credit(s)

Designed for Oregon state registered apprentices employed the plumbing trade. Course provides applied math concepts that include geometry, instruction on how to size water piping in all applications and treatment of potable water for private and public water systems. Sizing waste and vent piping, installing water heaters, diagnosing gas and electric water heaters will also be explored in this third year course. General topics include: safety in the workplace, trade math-basic offsets, plumbing tools, code definitions, and hands-on troubleshooting with plumbing. This course will also cover an overview of the Uniform Plumbing Code (UPC) with Oregon Amendments; administration, definitions and general regulations.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Demonstrate safe workplace behavior and employ common safety practices
2. Effectively use common trade calculations in standard and metric lengths, areas, weights, volumes, basic offsets, etc.
3. Identify and safely use and care for various plumbing hand and power tools
4. Demonstrate troubleshooting skills for a variety of equipment, including electric water heaters, gas water heaters, etc. mechanical fittings, installation standards
5. Use the concepts of temperature and pressure to assess effects on plumbing installations
6. Lay out a water supply system efficiently by calculating delivery lengths and pressure drops
7. Identify common water problems and the basic techniques and equipment to solve problems
8. Demonstrate knowledge of the Uniform Plumbing Code

APR 260A - Plumbing Water Supply Systems

2 Credit(s)

Designed for Oregon state registered apprentices employed the plumbing trade. Course provides applied math concepts that include geometry, instruction on how to size water piping in all applications and treatment of potable water for private and public water systems. Sizing waste and vent piping, installing water heaters, diagnosing gas and electric water heaters will also be explored in this third year course. General topics include: safety in the workplace, trade math-basic offsets, plumbing tools, code definitions, and hands-on troubleshooting with plumbing. This course will also cover an overview of the Uniform Plumbing Code (UPC) with Oregon Amendments; administration, definitions and general regulations.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Demonstrate safe workplace behavior and employ common safety practices
2. Effectively use common trade calculations in standard and metric lengths, areas, weights, volumes, basic offsets, etc.
3. Identify and safely use and care for various plumbing hand and power tools
4. Demonstrate troubleshooting skills for a variety of equipment, including electric water heaters, gas water heaters, etc. mechanical fittings, installation standards
5. Use the concepts of temperature and pressure to assess effects on plumbing installations
6. Lay out a water supply system efficiently by calculating delivery lengths and pressure drops
7. Identify common water problems and the basic techniques and equipment to solve problems
8. Demonstrate knowledge of the Uniform Plumbing Code

APR 261 - Plumbing Piping Sizing and Systems

4 Credit(s)

Designed for Oregon state-registered apprentices employed in the plumbing trade.

This course introduces the principles and hazards of backflow prevention, reviews different types of vents that can be installed in a drain, waste and vent system, sewage pumps, sump pumps, corrosive waste, and safety issues. In addition, this course covers sizing drain, waste, vent (DWV), and indirect waste piping.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Explain the principle of backflow due to back siphon age or back pressure, the hazards of backflow and the importance of backflow preventers.
2. Identify and explain the applications of the six basic backflow prevention devices.
3. Explain installation of common types of backflow devices.
4. Calculate drainage fixture units for waste system, building drain size, sewers and vent systems.
5. Calculate sizing for sewer pumps.
6. Identify and explain sizing requirements of special kinds of waste and vent systems.
7. Explain how a vent system works and the applications of each type of vent required for different drains waste and vent systems.
8. Design vent systems according to local code requirements, and sketch the different types of vents.
9. Identify corrosive waste and explain where they are found.
10. Perform hands-on lab work plumbing with waste, water, gas, vents.

APR 261A - Plumbing Piping Sizing and Systems

2 Credit(s)

Designed for Oregon state-registered apprentices employed in the plumbing trade. This course introduces the principles and hazards of backflow prevention, reviews different types of vents that can be installed in a drain, waste and vent system, sewage pumps, sump pumps, corrosive waste, and safety issues. In addition, this course covers sizing drain, waste, vent (DWV), and indirect waste piping.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Explain the principle of backflow due to back siphon age or back pressure, the hazards of backflow and the importance of backflow preventers
2. Identify and explain the applications of the six basic backflow prevention devices
3. Explain installation of common types of backflow devices
4. Calculate drainage fixture units for waste system, building drain size, sewers and vent systems
5. Calculate sizing for sewer pumps
6. Identify and explain sizing requirements of special kinds of waste and vent systems
7. Explain how a vent system works and the applications of each type of vent required for different drains waste and vent systems
8. Design vent systems according to local code requirements, and sketch the different types of vents
9. Identify corrosive waste and explain where they are found
10. Perform hands-on lab work plumbing with waste, water, gas, vents

APR 262 - Plumbing Advanced Waste Systems

2 Credit(s)

Designed for Oregon state-registered apprentices employed in the plumbing trade. This course will cover sizing and installation of gas piping with additional hands on instruction. Sizing of storm drainage, green plumbing, rain water harvesting, and gray water harvesting will be reviewed. The course will also cover compressed air line installation, sizing and troubleshooting.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Use a detailed drawing to identify system components, code requirements and installation requirements of gas piping.
2. Perform math equations to calculate rain water disposal and storm drainage.
3. Understand new green housing.
4. Harvest rain water and sizing.
5. Harvest gray water and sizing.

APR 262A - Plumbing Advanced Waste Systems

2 Credit(s)

Designed for Oregon state-registered apprentices employed in the plumbing trade. This course will cover sizing and installation of gas piping with additional hands on instruction. Sizing of storm drainage, green plumbing, rain water harvesting, and gray water harvesting will be reviewed. The course will also cover compressed air

line installation, sizing and troubleshooting.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Use a detailed drawing to identify system components, code requirements and installation requirements of gas piping
2. Perform math equations to calculate rain water disposal and storm drainage
3. Understand new green housing
4. Harvest rain water and sizing
5. Harvest gray water and sizing

APR 263 - Plumbing Code and Test Preparation

2-4 Credit(s)

Designed for Oregon state-recognized apprentices employed in the plumbing trade. This course is a comprehensive review of the Uniform Plumbing Code and theory of plumbing to prepare students for the Oregon Building Codes Journey level Plumbing exam.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Demonstrate complete knowledge of all aspects of the Uniform Plumbing Code and Oregon Amendments.
2. Demonstrate knowledge of plumbing theory.
3. Demonstrate skills in sizing, servicing, and installation of plumbing systems.

APR 263A - Plumbing Code and Test Prep

2 Credit(s)

Designed for Oregon state-recognized apprentices employed in the plumbing trade. This course is a comprehensive review of the Uniform Plumbing Code and theory of plumbing to prepare students for the Oregon Building Codes Journey level Plumbing exam.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Demonstrate complete knowledge of all aspects of the Uniform Plumbing Code and Oregon Amendments
2. Demonstrate knowledge of plumbing theory
3. Demonstrate skills in sizing, servicing, and installation of plumbing systems

APR 264I - Industrial Instrumentation Technician Process Controls

4 Credit(s)

Designed for Oregon state-recognized apprentices employed in a trade or industry-related occupation. This course explores control elements, transducers, and transmitters commonly used in process control. Students will learn a knowledge base consisting of the basic theory, vocabulary, and safety practices commonly used in process-control systems.

Learning Outcomes

Upon completion of this course, the successful student will be able to:

1. Explain the installation, utilization, and maintenance requirements for standby and emergency electrical systems.
2. Discuss sensing and transmitting devices used in an instrumentation loop.
3. Effectively use technical manuals, and specification sheets.
4. Understand how the three and five-point methods are used in instrumentation calibration.
5. Draw basic control loop diagrams that include a measuring element, a transducer, and a transmitter.
6. Identify components that require calibration in pneumatic, analog, and smart loops, and describe methods used to calibrate these components.

APR 265I - Industrial Instrumentation Technician Specialized Control Systems 1

4 Credit(s)

Designed for Oregon state-recognized apprentices employed in a trade or industry-related occupation. This course explores control elements, transducers, and transmitters commonly used in process control. Students will learn a knowledge base consisting of the basic theory, vocabulary, and safety practices commonly used in process-control systems.

Learning Outcomes

Upon completion of this course, the successful student will be able to:

1. Discuss the construction, operation, and uses of pneumatic control valves, actuators, and positioners.
2. Explain the installation and maintenance of various control devices.
3. Verify mechanical installation and verification of a loop.
4. Validate that a loop has correct tag numbers.
5. Troubleshoot and locate problems in a control loop.

6. Discuss PID controls and their application in industrial process control.

APR 268I - Industrial Instrumentation Technician Specialized Control**Systems 2**

4 Credit(s)

Designed for Oregon state-recognized apprentices employed in a trade or industry related occupation. This course explores control elements, transducers, and transmitters commonly used in process control. Students will learn a knowledge base consisting of the basic theory, vocabulary, and safety practices commonly used in process-control systems.

Learning Outcomes

Upon completion of this course, the successful student will be able to:

1. Address open, closed, and visual loop tuning.
2. Explain how data network devices and computers are interconnected for communication purposes.
3. Describe how open connectivity is used in industrial data networks.
4. Discuss the application of PLCs in industrial process control.
5. Identify components of PLCs, including power supplies, I/O modules and processor modules.
6. Describe how DCS was developed by combining the technologies of single loop control, direct digital control, and supervisory control.

APR 270 - Architectural Sheet Metal

4 Credit(s)

Designed for Oregon state-recognized apprentices employed in the sheet metal trade. Students will study architectural sheet metal in the context of today's industry. The course will include discovery of various types of materials, profiles of roofing panels, water conductors, various types of roof flashings, related trades that are integral with this trade. The philosophy of layout in the field and the application of actual installations, safety equipment and practices applicable to this trade are also discussed.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Interpret blueprint drawings and designs related to architectural sheet metal applications.
2. Identify the processes needed to fabricate and install architectural sheet metal products.
3. Understand various methods to create a water tight environment as related to architectural sheet metal applications.

APR 271 - Sheet Metal Building Codes and Installation

4 Credit(s)

Designed for Oregon state-recognized apprentices employed in the sheet metal trade. This course is an overview of the mechanical codes as related to the HVAC industry in commercial and residential applications. In addition, installation manuals will be explored as to proper installation and usage of HVAC equipment.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Understand the mechanical codes as they apply to their work processes.
2. Demonstrate a working knowledge of the mechanical code manual to locate necessary information for completion of the work processes and to converse with inspection officials.
3. Interpret installation manuals for safe and efficient equipment installations.

APR 272 - Sheet Metal Duct Design

4 Credit(s)

Designed for Oregon state-recognized apprentices employed in the sheet metal trade. The course content will include introduction to duct design, different styles of duct design, and multi-level duct system design. Other topics included in this course are: Heat loss, heat gain calculations, and instruction of use of duct calculators.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Interpret different styles of duct design.
2. Differentiate between several kinds of duct systems, while evaluating a given structure to derive the best application.
3. Compose examples of different duct systems.

APR 273 - General Sheet Metal Fabrication

4 Credit(s)

Designed for Oregon state-recognized apprentices employed in the sheet metal trade. This course is the study of the sheet metal trade as it is applied to general-needs metal work. The work studied is that outside of the traditional HVAC and

architectural scope as studied in previous terms with a broader base of skills to be learned, such as custom decorative and artistic finished products.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Use practical layout skills to include faster techniques and shop processes.
2. Work directly with customer/owner on creative custom designs.
3. Understand the uses and availability of more modern, computer driven tools for layout and design.
4. Demonstrate the importance of proper measuring and foresight on the physical job site.
5. Perform more effectively by using organizational and efficiency skills both in the shop and field.
6. Demonstrate the advantages of using different seaming/welding processes to achieve certain outcomes or effects.
7. Use proper installation techniques and applications for projects which are more visible.
8. Demonstrate effective communication skills in dealing with owners and contractors in areas of design, scheduling, coordination, and consulting.
9. Understand the procedures of bidding work in this field.

APR 274 - Sheet Metal Shop Fabrication

4 Credit(s)

Designed for Oregon state-recognized apprentices employed in the sheet metal trade. This course will provide students with an understanding of project planning techniques, principles of efficient shop layout; and knowledge of parallel line, radial line, and triangulation pattern development.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Discuss the key components used in effective project planning.
2. Efficiently arrange a shop to enhance productivity.
3. Use parallel and radial line techniques to fabricate sheet metal components.
4. Safely use tools and equipment common to the sheet metal industry.
5. Design and use patterns in the sheet metal fabrication process.

APR 275 - Sheet Metal Project Supervision

4 Credit(s)

This course is an introduction to construction management skills as they apply to project supervision. Course content will include human relations and interpersonal skills, safety, problem solving and negotiation techniques, construction documents, estimating and planning, and scheduling and quality control.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply human relations skills to the project management role.
2. Identify the project manager's duties and responsibilities with respect to safety and loss prevention.
3. Explain the scope and purpose of the project supervision program.
4. Identify the root causes of performance problems and how to handle conflicts.
5. Identify and explain the eight negotiating techniques and how to respond to them.
6. Define commodities, engineered equipment, construction equipment, and construction supplies.
7. List the types of documents used on a project.
8. Create a step-by-step list of tasks that will complete a project.
9. Describe the purposes and benefits of using formal project schedules and why it is important to maintain schedules.
10. Describe the essential components of an effective quality control and assurance program or process.

APR 285 - Motors

1-4 Credit(s)

This class addresses the concepts and principles of electromechanical devices. Emphasis will be placed on the theory and operation of AC and DC motors used in manufacturing and the HVAC industries. Transformers and power distribution systems will be studied along with adjustable frequency AC drives and stepper motors.

Learning Outcomes

Upon completion of this course, the successful student will be able to:

1. Have knowledge of mechanical principles, linear motion, simple machines and levers
2. Understand the nature of work, energy, torque, and power and how it is generated

3. Differentiate among transformer types by construction and use
4. Have knowledge of AC motor types, characteristics and nameplate parameters
5. Understand the characteristics of the four types of DC motors, the operating principles and applications of variable frequency drives and the operating principle of the stepper motor

APR 286 - Motors 2

1-4 Credit(s)

This course is a continuation of Motors 1. It addresses the relationship between electromechanical prime movers and the circuit elements used in their controls. The course progresses from electrical safety to electrical symbols and diagrams to control logic and devices. The focus will be on the operation, servicing, and troubleshooting of electromechanical systems beyond their initial design. Special emphasis is placed on the development of troubleshooting skills throughout the course.

Prerequisite: APR 285

Learning Outcomes

Upon completion of this course, the successful student will be able to:

1. Be knowledgeable of electrical safety and dangers of electrical power
2. Understand electrical symbols, abbreviations, and diagrams used in residential, commercial and industrial controls
3. Be knowledgeable of standard control devices
4. Understand the principles of control logic
5. Be knowledgeable of troubleshooting techniques required for the maintenance of electromechanical devices and controls
6. Have basic proficiency in the use of common tools and test equipment

APR 290 - Programmable Controllers 1

1-4 Credit(s)

This course covers the basics of relay and ladder logic technology as it pertains to Programmable Logic Controllers. Techniques in programming are explored and an emphasis is placed on interfacing I/O devices to the PLC. More advanced topics such as timers, counters, and sequencers are also covered. The student will also be introduced to a variety of troubleshooting problems at both component and system levels.

Prerequisite: Second year standing.

Learning Outcomes

Upon completion of this course, the successful student will be able to:

1. Build upon Electrical Theory principles and concepts power.
2. Understand a "Basic Control Systems" and its components
3. Comprehend and utilize serial communications with a programmable logic controller. Compile and troubleshoot ladder logic.
4. Use software programming and monitoring tools for Allen Bradley SLC PLC'S
5. Become familiar with controllers, program/ladder files, and routines and sub routines.
6. Know basic and complex ladder logic instructions.
7. Build a simple control system.

APR 291 - Programmable Controllers 2

1-4 Credit(s)

This class provides an introduction to the robot and its capabilities and explores the various tasks that robots are programmed to perform. Interfacing between robots, and field devices are practiced with an emphasis on troubleshooting.

Prerequisite: APR 290

Learning Outcomes

Upon completion of this course, the successful student will be able to:

1. Build upon Process Control 1 course material
2. Understand an "Automated Process Control System" and its components
3. Comprehend and utilize Ethernet communications in a manufacturing process
4. Understand Ethernet communications in a SCADA environment
5. Compile and troubleshoot ladder logic
6. Use software programming and monitoring tools for Allen Bradley ControlLogix PLC's
7. Become familiar with controllers, program/ladder files, and routines and sub routines
8. Know basic and complex ladder logic instructions
9. Build a simple automated process using a motor and PLC

APR 292 - Programmable Controllers 3

4 Credit(s)

Course covers the elements that define a manufacturing controlled process. The course begins at the system level with basic statistical terms and spreadsheet data

analysis. The second part discusses physical transducers and signal conditioning. The third part introduces analog to digital data conversion topics and the final part covers DC and stepper and motors.

Prerequisite: APR 291 and second-year standing

Learning Outcomes

Upon completion of this course, the successful student will be able to:

1. Understand the basic statistical terms and spreadsheet analysis of a manufactured control
2. Comprehend physical transducers and signal conditioning
3. Be able to discuss analog to digital data conversion topics
4. Demonstrate knowledge of DC and stepper and motors

Art

ART 111 - Introduction to Visual Arts

3 Credit(s)

Introduction to the spectrum of art from Paleolithic cave paintings to contemporary works through a combination of slide lectures, discussions, gallery/museums/public art visits, and student projects. This course expands your artistic, cultural, and historical references, as well as informs and enhances your own creative endeavors.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Identify and demonstrate an understanding of the technical procedures and creator's role in art throughout the history of cultural production.
2. Demonstrate and effectively communicate an understanding of the impact of religious, philosophical, and political beliefs on cultural production and communities.
3. Interpret and apply their understanding of the use and meaning of symbols and iconography throughout history to current issues, culture or history.
4. Compose written or visual material to effectively communicate knowledge and demonstrate comprehension of art historical periods, styles, terminology, iconography, theory and artworks.

ART 115 - Basic Design: Fundamentals

3 Credit(s)

Emphasis on fundamental visual elements, concepts, and theory as related to drawing, painting, photography, graphic design and other 2D media. Emphasis on visual elements and principles in 2D media and processes. Students will create and analyze projects that demonstrate critical and creative thinking and knowledge of 2D Design theory and practice. Students will participate in critiques, discussions and presentations of the historical and contemporary context of design. A foundation course for students interested in visual arts, graphic design and multimedia design fields.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Create and analyze design projects that demonstrate knowledge of 2D theory and practice
2. Identify and demonstrate use of 2D design elements, including line, shape, form, value, edge, positive-negative space
3. Identify and demonstrate use of 2D organizational elements, including unity, tension, rhythm, balance, depth, pattern, variety and emphasis
4. Identify and demonstrate 2D design concepts as they pertain to 2D disciplines, including painting, photography, drawing, graphic design and printmaking
5. Demonstrate individual visual, aesthetic, conceptual choices in 2D design projects that relate to specific art historical and/or contemporary art theory
6. Demonstrate the ability to analyze 2D art images, verbally, or in writing, related to specific 2D design media, theory and vocabulary
7. Display specific elements of creative thinking, including Persistence, Risk-taking, Reflection and Exploration

ART 116 - Basic Design: Color

3 Credit(s)

Emphasis on fundamental color theory, and color design as related to painting, film, photography, graphic design, ceramics and other 2D, 3D and digital media. Students will create and analyze projects that demonstrate critical and creative thinking and knowledge of color theory and practice. Students will participate in critiques, discussions and presentations of the historical and contemporary context of color theory and design. A foundation course for students interested in visual arts, graphic design and multimedia design fields.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Create and analyze design projects that demonstrate of use of color theory as related to 2D and/or 3D and/or digital media and practice
2. Identify and demonstrate use of color elements, including, but not limited to hue, value, intensity, temperature
3. Identify and demonstrate use of specific color systems and relationships including, but not limited to, achromatic, monochromatic, complimentary, analogous, triadic, split-complimentary
4. Identify and demonstrate use of 2D design elements and organizational principles, Including but not limited to, unity, harmony, emphasis, rhythm, tension, balance, repetition
5. Demonstrate individual visual, aesthetic, conceptual choices in color design projects that relate to specific art historical and/or contemporary art theory
6. Demonstrate the ability to analyze color and design images, verbally, or in writing, related to specific color media, theory and vocabulary
7. Display specific elements of creative thinking, including Persistence, Risk-taking, Reflection and Exploration

ART 117 - Basic Design: 3-Dimensional

3 Credit(s)

Beginning course on the fundamental principles of 3D design for art and non-art majors. Studio projects explore basic elements such as mass, physical texture, space, delineation of space, and planes in space. A foundation course for students interested in ceramics, sculpture, architecture, and other 3D design fields.

Learning Outcomes

Upon successful completion of this course, students will be able to:

3D Design Theory and Practice:

1. Students will create and analyze projects that demonstrate critical and creative thinking and knowledge of 3D design concepts and practices
2. Students will review and critique 3D art forms from diverse periods of human history

Creative and Critical Thinking/ Problem Solving:

3. Students will demonstrate personal aesthetic and conceptual decision-making using 3-D design theory, concepts and practices

3D Design Aesthetic Elements and Principles:

4. Students will demonstrate knowledge and use of 3D design organizational principles and elements in various 3D media and processes

Art Historical Theory and Practice:

5. Students will create works that reflect art historical and/or contemporary 3D Design concepts and practice

Critiques – Discussion, Analysis and Application:

6. Students will analyze contemporary and/or historical art forms in relation to Design media and theory
7. Students will explore and analyze cultural ideas as they pertain to art history and various art disciplines, such as painting, photography, and sculpture
8. Students will analyze and critique personal and peer artwork using specific 3D Design practice and theory

ART 118 - Artist Books and Pop-up

4 Credit(s)

Students will design and create original artist's books— intentional works of art created in the form of a book— using a variety of basic movable book structures and pop-up techniques. Curriculum will also focus on design process development, conceptual development and typographic layout. Coursework will demonstrate critical and creative thinking and applied learning via the knowledge and techniques of paper engineering and the history and aesthetics of the movable and pop-up books. May be repeated up to 9 total credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Have learned and assembled a variety of basic and creative book binding styles and pop-up techniques.
2. Have designed and created original artist books using existing written content or have written their own content according to the assignments.
3. Have focused on design process development, conceptual development and typographic layout.
4. Have learned the history of; the book form throughout the world, movable books, artist's books and fine press books.
5. Have a charged imagination to create personally and artistically relevant books.
6. Have personally studied artist books, pop-ups and historical books from the collections of the University of Oregon Special Collections and the collection of the instructor.

7. Have researched artist books, pop-up books and the history of the book at the library and online.

ART 119 - Typography 1

3 Credit(s)

Explores the use and design of letterforms and typographic design. Typographic history and classification of typefaces are covered, while essential craftsmanship and technical skills are stressed. Concept development and critical evaluation of design approaches are part of this course. Assignments are designed to build upon the skills acquired in subsequent projects. This course provides students with an in-depth understanding of how typography is used to communicate content as well as being visually effective. Type hierarchy and organizational layout skills will be explored. Students will perform a series of projects by hand and/or digitally to demonstrate skill in these areas.

Prerequisite: ART 115 or ART 131

Learning Outcomes

Students who successfully complete this course will be able to:

1. Understand typography terminology
2. Understand page layout and editorial design terminology
3. Have an effective use of basic design principles in page layout
4. Have an effective use of hierarchy in typographic design
5. Have an effective use of typefaces for a variety of typographic communication goals
6. Have skills in drawing letter forms by hand and indicating body text as a means to communicate layout concepts
7. Create a single page document in a basic software program

ART 120 - Intermediate Artist Books and Pop-up

4 Credit(s)

An artist book is an intentional work of art created in the form of a book. Students will create basic folded and stitched books and learn pop-up techniques. Topics: design process, conceptual development, typographic layout; history of movable, fine press and artist books. May be repeated up to 9 total credits.

Prerequisite: ART 118

Learning Outcomes

Students who successfully complete this course will be able to:

1. Demonstrate a variety of basic and creative book binding styles and pop-up techniques building on skills learned from the basic level class
2. Design and create original artists books using existing written content or have written their own content according to the assignments
3. Demonstrate design process development, conceptual development and typographic layout
4. Describe the history of the book form throughout the world, the history of movable books, artist's books and fine press books
5. Create personally and artistically relevant books
6. Have personally studied artists' books, pop-ups and historical books from the collections of the University of Oregon Special Collections and visiting artist and gallery owner, Laura Russell from the 23 Sandy Gallery in Portland

ART 131 - Introduction to Drawing

3 Credit(s)

Emphasis on developing skills in observation and the ability to describe three dimensional objects in two dimensional surfaces. Focus will be in perceptual drawing using still-life, figure, perspective or other representational drawing processes. Secondary focus in composition and drawing theory. Students will participate in critiques, discussions and presentations of the historical and contemporary context of drawing. A foundation course for students interested in visual arts, graphic design and multimedia design fields. May be repeated up to 9 total credits.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Create and analyze projects that demonstrate critical and creative thinking within representational drawing media and theory
2. Explore and demonstrate use of various traditional drawing media, including but not limited to, graphite, charcoal, conte', ink, and erasers
3. Identify and utilize aesthetic elements including value, form, positive and negative space, perspective and mark-making
4. Demonstrate and improve the ability to accurately see and transcribe observed three-dimensional objects and space into two-dimensional images, working from still-life, figure, architecture or other representational subjects
5. Demonstrate the ability to analyze drawings, verbally, or in writing, related to

specific drawing media, theory and vocabulary

6. Display specific elements of creative thinking, including Persistence, Risk-taking, Reflection and Exploration

ART 216 - Digital Design Tools

3 Credit(s)

An introduction to vector and bitmap images, and document-sharing software used in graphic design.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Identify underlying concepts attributed to each of these programs and how they can work together. Specifically: Demonstrate competency with basic computer literacy, file management and be able to identify key terminology; describe differences between, and uses for, core graphic and digital imaging software used in media design
2. Use Google Suites as the document sharing software
3. Demonstrate a basic knowledge of commands/menus/palettes/functions for vector-based software
4. Demonstrate a basic knowledge of commands/menus/palettes/functions for bitmap software
5. Locate and use imagery, and provide attribution for imagery, that is available to the public for free and legal sharing, use, repurposing, and remixing (measurement: internet search exercises and projects)
6. Explain the rationale behind your design project—its benefits, and how it solves the project objectives
7. Form an analysis that uses critical thinking to determine whether a design achieves its desired objectives
8. Create a minimum of the following: one multi-layer image using bitmap software, one finished work using vector software

ART 220 - Documentary Photography

3 Credit(s)

Explore the creation and historical impact of documentary photography. Lecture and discussion is based on the impact of images through history and how images of historical, cultural, and social significance are helping to shape our contemporary history and viewpoints. Students will create a still-photo documentary story during the term. Contents and expected learning proficiencies of this course vary from term to term. May be repeated up to 9 total credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Understand how to select a topic for the format of documentary photography. This is based on both the history and contemporary lectures associated with the course
2. Demonstrate how to structure a photo story by doing comprehensive research for the topic that has been selected
3. Understand how to structure a workable timeline and create contacts to complete the necessary images through access
4. Understand how to create a shooting list that is essential to create a strong narrative
5. Demonstrate shooting, editing and presentation of the completed story

ART 225 - Digital Illustration

3 Credit(s)

Students gain experience in using vector software to create technical and creative illustrations.

Prerequisite: ART 216

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Have an understanding of the characteristics and advantages of object-oriented graphic programs
2. Be able to use illustration software to produce graphics and illustrations on the computer
3. Be able to modify and adapt type to solve design problems on the computer
4. Have an understanding of various methods of outputting electronically produced illustrations

ART 231 - Drawing: Intermediate

3 Credit(s)

Emphasis on technical development, aesthetics and composition within the drawing medium. Explore expressive visual concepts within historical and contemporary drawing theory. Students will participate in critiques, discussions and presentations of the historical and contemporary context of drawing. May be

repeated up to 9 total credits.

Prerequisite: ART 131 or instructor permission by portfolio.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Create and analyze projects that demonstrate critical and creative thinking within representational drawing media and theory
2. Explore and demonstrate use of various traditional drawing media, including but not limited to, graphite, charcoal, conte', ink, and erasers
3. Identify and utilize aesthetic elements including value, form, positive and negative space, perspective and mark-making
4. Demonstrate and improve the ability to accurately see and transcribe observed three-dimensional objects and space into two-dimensional images, working from still-life, figure, architecture or other representational subjects
5. Demonstrate the ability to analyze drawings, verbally, or in writing, related to specific drawing media, theory and vocabulary
6. Display specific elements of creative thinking, including Persistence, Risk-taking, Reflection and Exploration

ART 234 - Drawing: Figure

3 Credit(s)

Fundamental course in figure drawing. Students will develop representation of basic anatomical structure, proportion, foreshortening, and explore complex form relationships in value and space through drawing the human figure. Students will create and analyze projects that demonstrate creative and critical thinking, develop skills in composition, modes of individual expression, and examine the portrayal of the figure through art historical theory and context. May be repeated up to 9 total credits.

Prerequisite: ART 131.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Develop the student's ability to draw the human figure.
2. Develop further the student's awareness of and understanding of form in light and space through use of human figure as subject.
3. Introduce to the student an awareness of the human form as the key source for our understanding of form and form relationships in the historical development of art of Western Man, including all phases of design, as well as most abstract art.
4. Develop further the hand-eye-mind coordination skills needed to represent the human figure, the most complex and endless form of ideas.

ART 237 - Illustration 1

3 Credit(s)

This course explores possibilities of commercial illustration. The emphasis will be on solving visual problems and developing concepts and personal style. A variety of hands-on techniques and media will be covered. Students will create projects that emphasize imagination, design and compositional skills and the use of visual resources for image creation. Students will build upon observational drawing skills from Introduction to Drawing. May be repeated up to 9 total credits.

Prerequisite: ART 131.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Have an understanding of possibilities of the field of commercial illustration
2. Have an understanding of basic professional practices and copyright issues that pertain to illustration
3. Effectively use basic design principles, perceptual skills and compositional understanding
4. Effectively use observational drawing skills covered in Introduction to Drawing
5. Effectively use visual resources for image creation
6. Effectively use illustration techniques such as pen and ink, scratchboard, pencil and other media
7. Have the ability to solve basic illustration problems through a series of visual projects
8. Have the ability to solve visual problems, develop visual concepts and develop a personal style
9. Have the ability to complete a variety of visual projects such as technical illustration, humorous illustration and editorial illustration

ART 240 - Natural Science Drawing

3 Credit(s)

Natural Science Drawing introduces students to creating representational renderings through close observation of natural subjects including botanical, animal, insect, and aquatic life. Emphasis is on accuracy, form and structure. May

be repeated up to 9 total credits.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Acquire a foundational knowledge of techniques and materials used in natural science drawing
2. Understand the basic forms and structures in various life forms in nature
3. Accurately draw 3D forms on a 2D surface
4. Create interesting and engaging compositions
5. Critique and critically assess own work and process
6. Demonstrate a positive attitude toward art-making, and working in a studio community
7. Accurately use lighting, measuring tools, and equipment

ART 245 - Drawing for Media

4 Credit(s)

From concept to finished project, the ability to develop and communicate ideas visually is an essential skill for media professionals. This course teaches pre-production design and drawing techniques and practices valuable to a career in media. Students will work with materials and learn methods used for concept development, design and production. The practice of drawing will be integrated into the visualization process through the production of concept sketches, thumbnails, and storyboards. Primary focus will be on graphic development of ideas for visual communication.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Demonstrate basic rendering skills that enable students to develop their ideas and visually communicate them to others
2. Demonstrate knowledge of storyboard conventions
3. Articulate the value of and demonstrate the stages of visualization and visual development of media design

ART 248 - Stone Sculpture

3 Credit(s)

For the beginning student who desires to learn the art of stone carving. Historical and contemporary stone sculpture is studied as a basis for understanding the medium. Students experience the entire process of creating a stone sculpture: choosing the stone, developing a design, making simple hand-carving tools, mastering the use of power carving tools, finishing and display of the completed work. Regular discussions and critiques of class work is used to further understand technical and formal considerations in the work. Contents and expected learning proficiencies of this course vary from term to term. May be repeated up to 9 total credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Expand their knowledge of historical and contemporary artists and sculptural methods.
2. Develop a greater understanding of form/concept relationships.
3. Have knowledge of materials and construction techniques typically used in stone sculpture work.
4. Experience the process of design review; the standard process by which artworks are selected for public art projects.
5. Learn critical thinking skills, as well as the ability to discuss and defend their artwork in a thoughtful manner.

ART 250 - Ceramics: Hand Building

3 Credit(s)

A hands-on introductory ceramics course designed for students with no previous ceramic hand-building experience. Emphasis on fundamental ceramic formation processes, techniques, concepts, and theory. Students will develop critical problem-solving skills through the evaluation and interpretation of assignments. Explore cultural, historical, and contemporary themes related to course work. Develop and demonstrate the ability to discuss creative intent and content in personal and peer assignments. Content and expected learning proficiencies of this course vary from term to term. May be repeated up to 9 total credits.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Demonstrate an ability to think critically and creatively in solving assignment objectives
2. Apply creative solutions and various strategies toward problem-solving project requirements
3. Identify and answer relevant questions, ideas, concepts, and issues pertaining

to assignments through the lens of ceramic theory and practice

4. Demonstrate an understanding of ceramic terminology, materials, tools, techniques, and processes

5. Demonstrate and analyze personal aesthetic choices in projects that reflect an understanding of developing perceptual awareness, contemporary, historical, and cultural considerations

6. Demonstrate the ability to discuss content and topics in personal and peer assignments analytically

7. Demonstrate and utilize safe practices when handling ceramic materials in the studio

ART 251 - Ceramics: Wheel Throwing

3 Credit(s)

An introductory ceramics course designed for the student with no previous pottery training. Emphasis is on basic pottery wheel skills, simple glaze application, and an understanding of the fundamental pottery processes. Also the development of basic hand-eye-mind coordination for good form making, and an introductory exploration of historical, cultural, and modern trends and ideology. Contents and expected learning proficiencies of this course vary from term to term. May be repeated up to 9 total credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Have a basic understanding of the sensibilities and techniques necessary for the construction of functional ceramic ware.
2. Gain a further understanding of hand building methods plus basic potter's wheel usage and glaze application.

ART 253 - Ceramics: Intermediate

3 Credit(s)

Enhancement of ceramic wheel-throwing and hand building skills. An introduction to complex thrown and handbuilt forms with attention to good visual resolution, as well as the understanding of glaze formulation, testing, and kiln firing. Students will enhance their pottery decoration techniques, and conduct an in-depth exploration of historical, cultural, and modern trends and ideology in ceramics. Contents and expected learning proficiencies of this course vary from term to term. May be repeated up to 9 total credits.

Prerequisite: ART 250 and ART 251.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Develop further the student's understanding of and insight into the age old craft of pottery.
2. Gain the necessary skills, understanding and motivation needed to be independently and competently involved in the use of the potter's wheel and many other phases of the ceramic process.
3. Develop a personal sense of craftsmanship.

ART 255 - Alchemy of Ceramics: Materiality, Chemistry, and Kiln Firing

3 Credit(s)

A lab-based course that explores the essentials of ceramic chemistry, materials, and kiln firing practices. Emphasis on developing an understanding of the origins of ceramic materials, chemical composition, properties, and the function of clay bodies and glazes. Students will increase their ceramic knowledge and material literacy by experimentation and testing of materials for various surface outcomes, color, textural possibilities, and firing temperatures. The course provides practical information to utilize clay bodies and glazes in ways that will advance and enhance project goals and outcomes in course and studio work.

Prerequisite: ART 250.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Apply creative solutions and a variety of strategies in the development of clay bodies and glazes
2. Develop strategies for solving ceramic clay body and glaze processes and problems
3. Demonstrate ability to discuss the practical, functional and artistic qualities of glazes
4. Identify and explain properties of ceramics material outcomes in different historical and cultural contexts
5. Demonstrate an understanding of ceramic materials, applications and kiln firing processes
6. Demonstrate and analyze clay and glaze performance, and the function of

ceramic oxides in developing color for clays and glazes

7. Demonstrate ability to analyze, document and form conclusions based on lab observations

8. Identify and correct glaze flaws and clay body issues

ART 261 - Photography 1

3 Credit(s)

An introductory course focusing on the history and fundamentals of Photography. Various technical and aesthetic considerations of fine art photography are taught with an emphasis on camera handling, manual exposure control, composition, and basic color theory. The course covers digital camera features such as the aperture, shutter, proper exposure, creative control, and composition to improve image quality.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Demonstrate basic working of a film or digital camera in both manual and automatic modes
2. Develop technical skills and address aesthetic challenges and considerations of creative photography
3. Demonstrate fundamental principles of design, perspective and composition
4. Demonstrate control and manipulation of basic photographic exposure, depth of field variables
5. Use correct photographic and design terminology in critiquing photographs

ART 270 - Printmaking: Traditional and Digital Etching

3 Credit(s)

A beginning level course in non-toxic intaglio printmaking involving etching and printing using copper plates as the matrix. Traditional processes such as line etch, aquatint, drypoint, and engraving as well as digital photo etching processes will be explored. Students will design and create original edition prints and learn perceptual skills, compositional development, and basic thematic awareness. Coursework will demonstrate critical and creative thinking, the knowledge of technical intaglio printmaking and the history and aesthetics of the medium. May be repeated for up to 9 total credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Demonstrate competency in intaglio printing techniques, both traditional and digital processes
2. Design and create original artwork based on intaglio printing techniques
3. Demonstrate a satisfactory level of craftsmanship in the artwork
4. Articulate the content of the work with reference to materials and visual imagery

ART 271 - Printmaking; Woodcut and Linocut

3 Credit(s)

A beginning level course in relief printing, including woodcut, linoleum cut and wood engraving. Students explore techniques involved in relief printmaking to design and create original edition prints. Single block, multiple block, and reduction block techniques are introduced, as well as the aesthetics and history of printmaking. Students will design and create original editioned prints and learn perceptual skills, compositional development, and basic thematic awareness. Coursework will demonstrate critical and creative thinking, the knowledge of technical relief printmaking and the history and aesthetics of the medium. May be repeated for up to 9 total credits.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Demonstrate competency in the intermediate relief techniques
2. Design and create original artwork based on relief techniques
3. Demonstrate a satisfactory level of craftsmanship in the artwork
4. Articulate the content of the work with reference to materials and visual imager

ART 272 - Printmaking: Experimental Processes

3 Credit(s)

A beginning level course in monotype and collage plate printmaking. Students explore techniques involved in creating original prints and combining processes. A variety of techniques are introduced as well as the aesthetics and history of printmaking. Students will design and create original editioned prints and learn perceptual skills, compositional development, and basic thematic awareness. Coursework will demonstrate critical and creative thinking, the knowledge of technical collage and monotype printmaking and the history and aesthetics of the medium. May be repeated up to 9 total credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to: 1. Be

able to make visual statements revealing basic knowledge of at least two of the printmaking techniques of Intaglio (Etching, etc.), Relief (Woodcut, etc.) and Collagraphy (Mixed Media)

ART 273 - Printmaking: Intermediate Traditional and Digital Etching

3 Credit(s)

A course on non-toxic multiple plate and other color intaglio etching techniques. This course explores traditional as well as digital, photo intaglio printmaking. The class is an in-depth study for students wanting to continue with Intaglio printmaking. Students will design and create original editioned prints and learn perceptual skills, compositional development, and basic thematic awareness. Coursework will demonstrate critical and creative thinking, the knowledge of technical intaglio printmaking and the history and aesthetics of the medium. May be repeated up to 9 total credits.

Prerequisite: ART 270

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Demonstrate competency in the intermediate intaglio techniques.
2. Design and create original artwork based on intaglio techniques.
3. Demonstrate a satisfactory level of craftsmanship in the artwork.
4. Articulate the content of the work with reference to materials and visual imager.

ART 274 - Printmaking: Intermediate Woodcut and Linocut

3 Credit(s)

A course in intermediate level printing techniques. It explores traditional as well as contemporary issues in Relief printmaking. The class is an in-depth study for students wanting to continue with Relief printmaking. Contents and expected learning proficiencies of this course vary from term to term. May be repeated up to 9 total credits.

Prerequisite: ART 271.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Demonstrate competency in the intermediate relief techniques .
2. Design and create original artwork based on relief techniques.
3. Demonstrate a satisfactory level of craftsmanship in the artwork.
4. Articulate the content of the work with reference to materials and visual imager.

ART 275 - Screen Printing

3 Credit(s)

A beginning course in screen printing. Explores traditional and experimental techniques using water-based and textile inks and emphasizes skill development, personal image making, and the creation and applications of editioned prints. Students explore established and contemporary issues in screen printing. The objective of this course is to provide students with a strong foundation in this medium. Contents and expected learning proficiencies of this course vary from term to term. May be repeated up to 9 total credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Demonstrate competency in screen-printing techniques.
2. Design and create original artwork using screen-printing techniques.
3. Demonstrate a satisfactory level of craftsmanship in screen-printing.
4. Have a working knowledge of techniques, safe procedures, and related medium-specific vocabulary.
5. Demonstrate a positive attitude towards screen-printing, art-making, and working in a studio community.

ART 276 - Sculpture: Introduction

3 Credit(s)

A beginning course for students without prior training in sculpture. This course will introduce students to a variety of sculptural processes such as additive, subtractive and constructive techniques. Through working hands-on with various sculptural materials, students will develop an understanding of space and form, while actively exploring concepts of content and meaning in their work. Projects and media explored (ie: clay, plaster, wood, metal, stone, mixed media, etc.) vary from term to term. May be repeated up to 9 total credits.

Learning Outcomes

Upon successful completion of this course, students will be able to:

3D Design Theory and Practice:

1. Students will create and analyze projects that demonstrate critical and creative thinking and knowledge of Design theory and practice
2. Students will review and critique 3D art forms from diverse periods of human history

Creative and Critical Thinking/ Problem Solving:

3. Students will demonstrate personal aesthetic and conceptual decision-making using 3D/ Sculpture concepts and practices

3D Design Aesthetic Elements and Principles:

4. Students will demonstrate knowledge and use of 3D design organizational principles and elements in various 3D media and processes

Art Historical Theory and Practice:

5. Students will create works that reflect art historical and/or contemporary design media and concepts

Critiques – Discussion, Analysis and Application:

6. Students will analyze contemporary and/or historical art forms in relation to sculptural media and theory

7. Students will explore and analyze cultural ideas as they pertain to art history and various art disciplines, such as painting, photography, and sculpture

8. Students will analyze and critique personal and peer artwork using specific 3D Design practice and theory

ART 277 - Sculpture: Welding

3 Credit(s)

An intermediate-level sculpture class emphasizing the process of metal welding fabrication. This course focuses on the techniques of oxy-acetylene welding, shielded metal arc welding, and gas metal arc welding, as well as the aesthetics of fabricated metal sculpture. Contents and expected learning proficiencies of this course vary from term to term. May be repeated up to 9 total credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Gain the basic coordination and perceptual skills for further progress in making sculpture.

ART 278 - Sculpture: Wood

3 Credit(s)

A beginning-level course designed to strengthen and develop the student's initial capability in sculpture. Specific emphasis is on exploring wood construction and carving techniques, and their application in making sculpture. Contents and expected learning proficiencies of this course vary from term to term. May be repeated up to 9 total credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Study form and space as concepts in nature and the man-made world
2. Study the relationship of form and space to materials and processes
3. Study the evolution of concepts of form and space in history
4. Study the growth of an idea or concept through processes of sculpturing

ART 281 - Painting: Introduction

3 Credit(s)

Fundamental course in painting media (acrylic). Emphasis on basic concepts of painting and developing skills in perception, representation, composition, color, and use of traditional painting materials. Student will create and analyze projects that demonstrate critical and creative thinking. Individual and group critiques, discussions and presentations will expand the students' perceptions of the artistic process and painting practice and theory within historical and cultural contexts. May be repeated up to 9 total credits.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Create and analyze projects that demonstrate critical and creative thinking utilizing perceptual aspects of painting
2. Explore and demonstrate use of acrylic painting media, including a variety of additive acrylic mediums, including but not limited to retarders, extenders, and gel medium
3. Identify and utilize aesthetic elements including value, form, positive and negative space, perspective and a variety of brush strokes
4. Identify and demonstrate use of specific color elements, systems and relationships
5. Demonstrate and improve the ability to accurately see and transcribe observed three-dimensional objects and space into two-dimensional images, working from still-life, figure or other representational subjects
6. Demonstrate the ability to analyze paintings, verbally, or in writing, related to specific painting media, theory and vocabulary
7. Display specific elements of creative thinking, including Persistence, Risk-taking, Reflection and Exploration

ART 282 - Landscape and Architectural Photography

4 Credit(s)

Combines the formal issues of photography with the specific subjects of photographing landscape and architecture. Through weekly assignments photographing in the field, students apply fundamental concepts and gain a critical understanding of the role of photography in architecture and landscape architecture. All camera types and skill levels appropriate for this course.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Effectively represent landscape and architecture photographically
2. Critique landscape and architectural photography
3. Gain basic knowledge of the genres of architecture and landscape photography

ART 284 - Painting: Intermediate

3 Credit(s)

An intermediate-level course in acrylic painting. Course further expands the student's knowledge of composition and technique. A series of structured exercises are introduced to develop personal expression. Subject matter may emphasize figure or landscape. Contents and expected learning proficiencies of this course vary from term to term. May be repeated up to 9 total credits.

Prerequisite: ART 281.**Learning Outcomes**

Upon successful completion of this course, students will be able to:

1. Create and analyze projects that demonstrate critical and creative thinking, utilizing perceptual and conceptual aspects of painting
2. Demonstrate technical proficiency using a variety of acrylic painting media
3. Demonstrate proficiency in the use and development of technical, aesthetic and compositional elements of painting
4. Demonstrate proficiency in the use and identification of color elements, systems and relationships
5. Demonstrate proficiency in analyzing paintings verbally, or in writing, related to specific painting media, theory and vocabulary
6. Explore and demonstrate individual expressive, aesthetic and/or conceptual choices in painting projects
7. Explore conceptual painting skills and work with specific thematic ideas
8. Display specific elements of creative thinking, including Persistence, Risk-taking, Reflection and Exploration

ART 285 - Advanced Screen Printing

3 Credit(s)

Advanced and contemporary screen-printing techniques and theory. The curriculum builds on basic skills by focusing on the continued and enhanced development of traditional and progressive techniques. Students will study application of water-based inks and fabric dyes, emphasizing the development of both skill and personal image making. This course also introduces applied computer and modern technology in screen-printing. The objective of this course is to provide students with the opportunity to develop and enhance a comprehensive foundation in the medium. Contents and expected learning proficiencies of this course vary from term to term. May be repeated up to 9 total credits.

Prerequisite: ART 275.**Learning Outcomes**

Upon successful completion of this course, the student should be able to:

1. Demonstrate competency in screen-printing techniques.
2. Design and create original artwork using screen-printing techniques.
3. Demonstrate a satisfactory level of craftsmanship in contemporary screen-printing methods.
4. Have a working knowledge of techniques, safe procedures, and related medium-specific vocabulary.
5. Demonstrate a positive attitude towards screen-printing, art-making, and working in a studio community.
6. Have a knowledge of color theory as applied to screen printing.
7. Apply graphic techniques as a tool for generating high quality imagery.

ART 286 - Sculpting for Animators

3 Credit(s)

This course will introduce students to a broad range of sculpting techniques necessary to design and animate their own characters. By utilizing traditional modeling and casting techniques combined with the latest digital printing and scanning technologies, students will get hands on experience in the processes used in today's animation and gaming industries. May be repeated up to 3 total credits.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Develop original animation character, through research, creation of narrative backstory, description of body mechanics, material sample-board and visual storyboard
2. Participate in Peer review utilizing common course specific language. Incorporate peer feedback and modify design according to specified design development process
3. Demonstrate the technical and creative skills to design, model and reproduce an animation character in 3D
4. Design mold, construct and cast multiple variations of character in various media
5. Apply the fundamentals of 3D Printing and Scanning
6. Demonstrate a broad understanding of 3D design principles, skills and processes required in design and animation fields

ART 288 - Introduction to Web Design and Social Media

3 Credit(s)

Introduction to design and communication principles as they apply to web design. Students also investigate the unique challenges involved in website design including an introduction to social media marketing.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Demonstrate understanding of the elements of design and of composition
2. Demonstrate understanding and proper use of color and typography
3. Demonstrate ability to create objectives and a design strategy
4. Define unique challenges of web design
5. Identify issues in navigation
6. Demonstrate knowledge of website testing and marketing
7. Demonstrate effective use of an organizational grid in page design
8. Create an effectively designed website
9. Identify issues of responsive web design
10. Demonstrate entry-level use of CSS for colors, backgrounds, formatting text and page layout
11. Demonstrate knowledge of current Web Standards through web authoring

ART 289 - Web Production

3 Credit(s)

An intermediate web development course emphasizing web production best practices and strategies. Topics include site building and management, navigation and usability, web typography, and image optimization for the web. Students will gain hands-on experience with modern tools and technologies including use of web-based tools and web authoring software.

Prerequisite: MUL 212 and Instructor consent

Learning Outcomes

Upon successful completion of this course students will be able to:

1. Mark up content and structure for a webpage using proper semantic HTML
2. Create and optimize graphic elements for a web page including appropriate use of currently supported file formats and compression methods to achieve a balance between image quality and efficient file size
3. Build a webpage layout using current standard CSS techniques
4. Use web fonts with CSS
5. Identify and address current typography issues in web design
6. Properly use internal, external and inline styles (CSS)
7. Upload and update a website on a live webserver
8. Create basic planning documents for and engage in web design workflow

ART 290 - Design Concepts for the Web

3 Credit(s)

An intermediate study of website design with an emphasis on informational architecture and user interface/experience design including strategy, planning, usability, and design of website interfaces and layouts.

Prerequisite: ART 289

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Define goals and create a design strategy
2. Identify cross-platform and cross-browser issues
3. Inventory content and develop organization structure for site
4. Create a clear and functional navigational system
5. Identify issues in accommodating users with disabilities
6. Identify multimedia options in web design
7. Create Cascading Style Sheets

8. Demonstrate advanced typographic techniques for web design

9. Identify standards for effective writing on the web

ART 291 - Sculpture: Metal Casting

5 Credit(s)

Designed for students with prior sculpture training who desire to learn the method and theory of the lost-wax foundry casting process. Students will gain the experience of using wax as the direct sculptural medium, preparing the sculpture for casting, and the foundry processes of burnout, melting, and pouring. Contents and expected learning proficiencies of this course vary from term to term. May be repeated up to 9 total credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Expand their knowledge of historical and contemporary metal sculpting methods.
2. Develop a greater understanding of form/concept relationships in their work.
3. Develop knowledge of materials and carving techniques typically used in bronze sculpture.
4. Learn critical thinking skills, as well as the ability to discuss and defend their artwork in a thoughtful manner.
5. Broaden their knowledge of sculptural processes with the addition of mold making, welding and patina work.

ART 292 - Design Art for Public Places

4 Credit(s)

Students will learn the politics, methods and execution of public art. They will examine case studies of the interface of art and the public, from a historical as well as an aesthetic and socio-political perspective, as well as work on a design project for a pre-determined public space.

Prerequisite: ART 115

Learning Outcomes

Upon successful completion of this course, students should be able to:

1. Know about the key issues of designing for the Public. Assess new design job and investigate what its potential public impacts could be. (CLO 1.1)
2. Determine client's needs, discuss message and ideas already present. Research the project and meet with teammates to discuss. (CLO 1.2)
3. Communicate project plan with client via Creative Brief for approval. (CLO 1.3)
4. Discuss with team members and instructor and get feedback on ideas. Discuss with client and integrate their ideas with those of the team. (CLO 1.4)
5. Acquire all copy and images, do research on subject and check all content for verification, copyright and citation information as needed. (CLO 1.5)
6. Find design solutions and defend them or integrate other relevant points of view as needed. (CLO 1.6)
7. Assess public interface of media created. Understand responsibility of being a media-maker. (CLO 2.1)
8. Get multi-cultural viewpoints on public Artwork and assess against possible perceptions by diverse population of new project at hand. (CLO 2.2)
9. Assess impact of public art piece on a diverse community. (CLO 2.3)
10. Work with others and experts as needed to vet possible interpretations and get proper feedback before execution of public art piece. (CLO 2.5)
11. Attempt multiple ideas to achieve goals of project. (CLO 3.2)
12. Use computers and other resources to produce designs for presentation. (CLO 3.3)
13. Get feedback from instructor and team. Respond to feedback with amendments. Get feedback from client. Make amendments until completed. Debrief with instructors and team. Get final feedback from clients. (CLO 3.4,3.5,3.6)
14. Determine best medium for goals of the project (CLO 4.1)
15. Create designs that communicate the content on both verbal and non-verbal forms. (CLO 4.2)
16. Consider target market demographic as well as the diverse population at large that may interface with the public art project. (CLO 4.3)
17. Develop project with fully supported and vetted research and thoughtfulness for all aspects of the project. (CLO 4.4)
18. Get feedback from many (focus groups if possible) to determine if there is the possibility of double meanings, misinterpretations or any unintended miscommunication on projects. (CLO 4.5)
19. Learn team building and communication skills in order to work with others towards common goals of a public project. (CLO 4.6)

20. Work with knowledge of the subject via its history to broaden awareness of the topic and create new artifacts based upon that knowledge, with intended goals. (CLO 5.1)
21. Learn how to synthesize individual and team ideas with client feedback in sequential meetings. Apply what works towards future meetings and outcomes. (CLO 5.2)
22. Work within client budget, assess methods for effectiveness and cost, get quotes, look for money saving options, quote client. (CLO 5.3)
23. Debrief with teammates, instructor and client. Reflect on the challenges the design project brought with it and develop skills for applying learning in future situations. (CLO 5.4)

ART 293 - Sculpture: Figure

3 Credit(s)

Intensive study of the human figure in 3D using live models. Emphasis on the study and theory of anatomy, proportion, and gesture. Projects are developed from modeled clay over wire armatures and may be completed in fired terra cotta. Contents and expected learning proficiencies of this course vary from term to term. May be repeated up to 9 total credits.

ART 294 - Watercolor: Introduction

3 Credit(s)

A beginning course in watercolor for art and non-art majors. Emphasis on introducing and understanding the watercolor medium, basic color theory, and compositional development. Students create and analyze projects that demonstrate critical and creative thinking and knowledge of watercolor media, history, and practice. May be repeated up to 9 total credits.

Prerequisite: ART 131, drawing experience, or instructor consent.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Achieve a working knowledge of the methods, materials and techniques needed to paint the kind of watercolor statements he/she wants to make.
2. Be able to make watercolor paintings which reveal a significantly increased capability in the medium of watercolor painting, in relation to his/her ability, intelligence and industry.

ART 295 - Watercolor: Intermediate

3 Credit(s)

An intermediate level course in watercolor for art and non-art majors. Emphasis on further development and exploration of technical watercolor skills, concept, composition development and critical analysis. Students create and analyze projects that demonstrate critical and creative thinking, knowledge of watercolor media, history, and practice, and which demonstrate individual exploration of process and content. May be repeated up to 9 total credits.

Prerequisite: ART 294, previous college watercolor class, or instructor consent.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Demonstrate in his/her work an increased knowledge and capability of skill level, technique and expressive content in the medium of transparent watercolor

ART 296 - Mural Painting Class

4 Credit(s)

Students will learn hands-on about the execution of a mural, either indoor or outdoor, depending upon available client and space, by painting a mural with the instructor. Location will be determined by available space and client and agreed upon by both the college and any community partners involved.

Prerequisite: ART 115 and ART 116

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Assess the mural job, assess the substrate, review design, think about problems both from a production and content standpoint (CLO 1.1).
2. Determine production needs, ascertain and obtain all information and assets within timeline for deliverables (CLO 1.2).
3. Communicate project plan with client via production and cost proposal (CLO 1.3).
4. Discuss with team members and instructor and get feedback on process from all (CLO 1.4).
5. Acquire all copy and images necessary, perform research on subject and check all content for verification, copyright information and citation as needed (CLO 1.5).
6. Define production methodology and discuss with team and instructor. Defend ideas or incorporate other feedback as necessary (CLO 1.6).

7. Assess public interface of mural and discuss in class. Understand responsibility of public art and relate to history of mural making (CLO 2.1).
8. Get multi-cultural viewpoints on design and message (CLO 2.2).
9. Assess impact on a diverse community of public art (CLO 2.3).
10. Work with others and experts as needed to vet messages and get proper feedback before execution. *note: not a design class, but production people have a responsibility to address any misgivings about the design and how it will effect a diverse population (CLO 2.4).
11. Attempt multiple ideas to achieve best production of the project (CLO 3.1).
12. Get feedback on ideas from teammates and assimilate idea into a cohesive production plan (CLO 3.2).
13. Use computers and other resources to produce final product (CLO 3.3).
14. Get feedback from instructor and team. Respond to feedback with improvements of techniques. Get feedback from client. Make amendments and improve quality until completed. Debrief with instructors and team. Get final feedback from client and public (CLO 3.4).
15. Determine best techniques and medium for project at hand (CLO 4.1).
16. Create communication piece that informs the production process and budget to the client. Show both verbal and non-verbal examples (CLO 4.2).
17. Consider the viewing public of the local or regional area as well as greater world context (CLO 4.3).
18. Develop communication piece for client with fully supported and vetted research and thoughtfulness for all aspects of the project (CLO 4.4).
19. Get feedback from many to determine if there is the possibility of double meanings, misinterpretations or any unintended miscommunication on projects (CLO 4.5).
20. Learn team building and communication skills in order to work with others towards common goals of a public mural (CLO 4.6).
21. Work with instructor, clients, materials and acquired skills to get mastery of both content creation and production (CLO 5.1).
22. Apply learned techniques to the larger mural through repetition and instruction. Practice problem-solving learned on new areas of the mural (CLO 5.2).
23. Work within client budget, get quotes, look for money saving options, quote client, oversee production of job to stay with budget (CLO 5.3).
24. Debrief with teammates, instructor, client and public. Reflect on mural painted and develop skills for applying learning in the future (CLO 5.4)

Art History

ARH 200 - History of Design Arts

3 Credit(s)

From the first broadsides on the streets of London to aerodynamics in transportation technology to the advent of digital technology, History of Design Arts introduces students to a wide span of eras, cultures, ideas, and practitioners. The course will highlight the designs that shape our culture.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Identify and demonstrate an understanding of the technical procedures and creator's role in art throughout the history of cultural production
2. Interpret and apply their understanding of the use and meaning of symbols and iconography throughout history to current issues, culture or history
3. Demonstrate and effectively communicate an understanding of the impact of religious, philosophical, and political beliefs on cultural production and communities
4. Compose written or visual material to effectively communicate knowledge and demonstrate

ARH 203 - Survey of American Indian Art and Architecture: North and Central America

4 Credit(s)

A survey of the artistic traditions of the native cultures from the Arctic to South-Central America. Works and sites are used to explore the various cultures of pre-Columbian America and the continuing traditions of ancestral peoples. Cultures explored will include the Mayan, Aztec, Inuit, and major nations of prehistoric and modern Canada and the United States.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Identify and demonstrate an understanding of the technical procedures and creator's role in art throughout the history of cultural production.

2. Demonstrate and effectively communicate an understanding of the impact of religious, philosophical, and political conditions on cultural production and communities.
3. Interpret and apply their understanding of the use and meaning of symbols and iconography throughout history to current issues, culture or history.
4. Compose written or visual material to effectively communicate knowledge and demonstrate comprehension of art historical periods, styles, terminology, iconography, theory and artwork.

ARH 204 - History of Western Art 1

3 Credit(s)

A historical survey of the visual arts from prehistory to the fall of the Roman Empire including selected works of ancient pottery, sculpture and architecture.

Prerequisite: Suggested placement into WR 115 or above (college-level reading and writing skills).

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Identify and demonstrate an understanding of the technical procedures and creator's role in art throughout the history of cultural production
2. Demonstrate and effectively communicate an understanding of the impact of religious, philosophical, and political conditions on cultural production and communities
3. Interpret and apply their understanding of the use and meaning of symbols and iconography throughout history to current issues, culture or history
4. Compose written or visual material to effectively communicate knowledge and demonstrate comprehension of art historical periods, styles, terminology, iconography, theory and artworks

ARH 205 - History of Western Art 2

3 Credit(s)

A historical survey of the visual arts from the early Christian era through the High Renaissance in Europe including selected works of early religious art and architecture, medieval art and manuscripts, and Renaissance painting.

Prerequisite: Suggested placement into WR 115 or above (college-level reading and writing skills).

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Identify and demonstrate an understanding of the technical procedures and creator's role in art throughout the history of cultural production
2. Demonstrate and effectively communicate an understanding of the impact of religious, philosophical, and political conditions on cultural production and communities
3. Interpret and apply their understanding of the use and meaning of symbols and iconography throughout history to current issues, culture or history
4. Compose written or visual material to effectively communicate knowledge and demonstrate comprehension of art historical periods, styles, terminology, iconography, theory and artwork

ARH 206 - History of Western Art 3

3 Credit(s)

A historical survey of the visual arts from the High Renaissance to present day. Including selected works of Renaissance and early modern painting, modern architecture, and new art forms including environmental and performance art.

Prerequisite: Suggested placement into WR 115 or above (college-level reading and writing skills).

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Identify and demonstrate an understanding of the technical procedures and creator's role in art throughout the history of cultural production
2. Demonstrate and effectively communicate an understanding of the impact of religious, philosophical, and political conditions on cultural production and communities
3. Interpret and apply their understanding of the use and meaning of symbols and iconography throughout history to current issues, culture or history
4. Compose written or visual material to effectively communicate knowledge and demonstrate comprehension of art historical periods, styles, terminology, iconography, theory and artworks

ARH 207 - History of Indian Art

3 Credit(s)

A historical survey of the visual arts of India from the Indus Valley Civilization to the present day including selected works of Buddhist, Hindu, and Mughal arts, British Colonialism, and contemporary art practices.

Prerequisite: Suggested placement into WR 115 or above (college-level reading and writing skills).

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Identify and demonstrate an understanding of the technical procedures and creator's role in art throughout the history of cultural production
2. Demonstrate and effectively communicate an understanding of the impact of religious, philosophical, and political conditions on cultural production and communities
3. Interpret and apply their understanding of the use and meaning of symbols and iconography throughout history to current issues, culture or history
4. Compose written or visual material to effectively communicate knowledge and demonstrate comprehension of art historical periods, styles, terminology, iconography, theory and artworks

ARH 208 - History of Chinese Art

3 Credit(s)

A historical survey of the visual arts of China from the Neolithic era to the present day. Including, selected works of Confucianism and Buddhism, Imperial Chinese culture, architectural forms, ink painting, and landscape traditions.

Prerequisite: Suggested placement into WR 115 or above (college-level reading and writing skills).

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Identify and demonstrate an understanding of the technical procedures and creator's role in art throughout the history of cultural production
2. Demonstrate and effectively communicate an understanding of the impact of religious, philosophical, and political conditions on cultural production and communities
3. Interpret and apply their understanding of the use and meaning of symbols and iconography throughout history to current issues, culture or history
4. Compose written or visual material to effectively communicate knowledge and demonstrate comprehension of art historical periods, styles, terminology, iconography, theory and artwork

ARH 209 - History of Japanese Art

3 Credit(s)

A historical survey of the visual arts of Japan from the prehistoric era to the present day including selected works of pottery, woodblock prints, sculpture, and architecture.

Prerequisite: Suggested placement into WR 115 or above (college-level reading and writing skills).

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Identify and demonstrate an understanding of the technical procedures and creator's role in art throughout the history of cultural production
2. Demonstrate and effectively communicate an understanding of the impact of religious, philosophical, and political conditions on cultural production and communities
3. Interpret and apply their understanding of the use and meaning of symbols and iconography throughout history to current issues, culture or history
4. Compose written or visual material to effectively communicate knowledge and demonstrate comprehension of art historical periods, styles, terminology, iconography, theory and artwork

ARH 211 - Early Modern Art: 1850-1910

3 Credit(s)

Historical survey of the development of early "modern" art from the mid-19th century to the beginning of the 20th century. Examines major styles, monuments and artists within their cultural context, including Impression, Post Impression and Cubism. Explores the impact of these artistic developments on later art and society.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Identify and demonstrate an understanding of the technical procedures and creator's role in art throughout the history of cultural production.

2. Demonstrate and effectively communicate an understanding of the impact of religious, philosophical, and political conditions on cultural production and communities.
3. Interpret and apply their understanding of the use and meaning of symbols and iconography throughout history to current issues, culture or history.
4. Compose written or visual material to effectively communicate knowledge and demonstrate comprehension of art historical periods, styles, terminology, iconography, theory and artwork.

ARH 212 - Twentieth-Century Art

3 Credit(s)

Historical survey of 20th century art. Examines key artist, styles and movements within a social, philosophical and political context. Course emphasizes developments during first half of the century, but which inform the visual arts today. Includes presentations by practicing artists to provide connections to art in our current time.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Identify and demonstrate an understanding of the technical procedures and creator's role in art throughout the history of cultural production.
2. Demonstrate and effectively communicate an understanding of the impact of religious, philosophical, and political conditions on cultural production and communities.
3. Interpret and apply their understanding of the use and meaning of symbols and iconography throughout history to current issues, culture or history.
4. Compose written or visual material to effectively communicate knowledge and demonstrate comprehension of art historical periods, styles, terminology, iconography, theory and artwork.

ARH 214 - Arts of the United States

3 Credit(s)

A historic study of the artistic traditions of the United States from the Colonial period to the early modern era. Works are used to investigate the cultural traditions of the country as they reflect its growth and development. Major topics will include Colonial portraiture, landscape and place in 19th century art, nationalism and historical moments, the West as a cultural idea, the impact of industrialism and urban culture, and early developments in modernism.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Identify and demonstrate an understanding of the technical procedures and creator's role in art throughout the history of cultural production.
2. Demonstrate and effectively communicate an understanding of the impact of religious, philosophical, and political conditions on cultural production and communities.
3. Interpret and apply their understanding of the use and meaning of symbols and iconography throughout history to current issues, culture or history.
4. Compose written or visual material to effectively communicate knowledge and demonstrate comprehension of art historical periods, styles, terminology, iconography, theory and artwork.

ARH 217 - History of Middle Eastern and Islamic Art

3 Credit(s)

A historical survey of the visual arts of the Middle East and Islam. Including, selected works of Mesopotamia and Persia, metalwork, Islamic ornament and architecture, miniature paintings and calligraphy.

Prerequisite: Suggested placement into WR 115 or above (college-level reading and writing skills).

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Identify and demonstrate an understanding of the technical procedures and creator's role in art throughout the history of cultural production
2. Demonstrate and effectively communicate an understanding of the impact of religious, philosophical, and political conditions on cultural production and communities
3. Interpret and apply their understanding of the use and meaning of symbols and iconography throughout history to current issues, culture or history
4. Compose written or visual material to effectively communicate knowledge and demonstrate comprehension of art historical periods, styles, terminology, iconography, theory and artwork

ARH 218 - History of Photography:1700-1910

3 Credit(s)

Explores photography from its origins in 18th century experiments to developments up to the beginning of the 20th century. Course modules examine the development of specific types of photography and how each type influenced worldviews. Photographs are examined in both cultural and critical terms, allowing students to think critically about photographs as well as their place in society. It requires the student to develop information literacy skills, as well as to improve basic research and writing skills.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Identify and demonstrate an understanding of the technical procedures and creator's role in art throughout the history of cultural production.
2. Demonstrate and effectively communicate an understanding of the impact of religious, philosophical, and political conditions on cultural production and communities.
3. Interpret and apply their understanding of the use and meaning of symbols and iconography throughout history to current issues, culture or history.
4. Compose written or visual material to effectively communicate knowledge and demonstrate comprehension of art historical periods, styles, terminology, iconography, theory and artwork.

ARH 219 - History of Photography: 1910-1950

3 Credit(s)

An exploration of the origins of photography from 1910 to 1950. Course modules explore the development of specific types of photography, and how they influenced the worldviews. Photographs are examined in cultural and critical terms, allowing students to think critically about photographs as well as their place in a society. It requires the student to develop information literacy skills, as well as to improve basic research and writing skills.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Identify and demonstrate an understanding of the technical procedures and creator's role in art throughout the history of cultural production.
2. Demonstrate and effectively communicate an understanding of the impact of religious, philosophical, and political conditions on cultural production and communities.
3. Interpret and apply their understanding of the use and meaning of symbols and iconography throughout history to current issues, culture or history.
4. Compose written or visual material to effectively communicate knowledge and demonstrate comprehension of art historical periods, styles, terminology, iconography, theory and artwork.

ARH 220 - History of Photography: 1950-Present

3 Credit(s)

Study of the major commercial and artistic trends in photography from 1950 to the present. Entails critical reviews of the relationship of photography to significant cultural, political, and artistic trends of the recent past.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Identify and demonstrate an understanding of the technical procedures and creator's role in art throughout the history of cultural production.
2. Demonstrate and effectively communicate an understanding of the impact of religious, philosophical, and political conditions on cultural production and communities.
3. Interpret and apply their understanding of the use and meaning of symbols and iconography throughout history to current issues, culture or history.
4. Compose written or visual material to effectively communicate knowledge and demonstrate comprehension of art historical periods, styles, terminology, iconography, theory and artwork.

Astronomy

ASTR 121 - Astronomy of the Solar System

4 Credit(s)

ASTR 121, 122 and 123, may be taken out of sequence. This sequence provides an in-depth and comprehensive introduction to the science of astronomy. These courses are designed to serve non-science majors, but also offer a good introduction for prospective science majors interested in Astrophysics or Space Science. These courses have a significant lab component. ASTR 121 focuses on naked-eye astronomy and the science of astronomy focused primarily on our solar

system and comparative planetology, the Earth and its Moon, detailed consideration of the individual planets, solar system debris including comets and asteroids, and modeling the origin of our solar system. Lab included.

Prerequisite: MTH 052 or MTH 060 or MTH 065 or MTH 070 or MTH 095 or MTH 111 or placement test.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Think and communicate based on familiarity with a wide variety of physical phenomena involving the solar system and the means by which it is described and explained.
2. Think and communicate based on familiarity, in part through direct practice, with observational tools, chains of reasoning and exploration and knowledge of scientific methods that are part of the practice of this area of astronomy.
3. Correctly use scientific reasoning regarding the formation of the solar system, and think and communicate with significant basic conceptual understanding of systems involved in present-day terrestrial and Jovian planets.
4. Converse and comprehend making use of elementary descriptions and laws of mechanical motion and gravity applied to the motion of objects in our solar system.
5. Engage this area of astronomy with an active scientific literacy, which includes use of public resources widely available as part of large scale astronomy investigation.
6. Think and communicate based on an elementary understanding of exploration of the solar system, drawing conclusions from experimental data about possible explanations of physical mechanisms of the solar system and its constituent parts.
7. Formulate questions to move their thinking forward concerning the subject matter of the class.
8. Think and communicate with a familiarity with elementary applications of basic physics underlying the formation and structure of the solar system, as well as interplay of planetary systems such as plate tectonics, volcanic activity and atmospheric evolution.
8. Reflect and communicate on possible uses and impacts of this physics knowledge regarding the solar system.
9. Converse and write about the nature of science with increased sophistication and see physics/astronomy as a science, rather than a body of knowledge.
10. Appreciate that the insights provided by Classical Mechanics and Newtonian Gravity are valuable and useful even though physics has developed beyond Newtonian Gravity and Classical Mechanics and beyond mechanical theories - of which Classical Mechanics is a premier example.
11. Appreciate current efforts to create new insights in this area of astronomy and have a sense of currently open questions within the astrophysics community.

ASTR 122 - Stellar Astronomy

4 Credit(s)

ASTR 122 focuses on the fundamental physics concepts underlying our understanding of stars. How we observe light from stars and our Sun and its place in our Milky Way galaxy begins a comprehensive exploration of the nature of stars, from their birth to multiple paths to maturity and death, including super novae and stellar black holes. Lab included.

Prerequisite: MTH 052 or higher

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Think and communicate based on familiarity with a wide variety of physical phenomena involving stars and the means by which they are described and explained.
2. Think and communicate based on familiarity, in part through direct practice, with observational tools, chains of reasoning and exploration and knowledge of scientific methods that are part of the practice of this area of astronomy.
3. Correctly use scientific reasoning regarding the classification, formation, evolution of stars and their remnants, and think and communicate with a significant basic conceptual understanding of physical systems involved in the classification, formation, evolution and remnants of stars.
4. Converse and comprehend through communication using elementary descriptions and dynamical laws involving balance between atomic fusion, gravity and pressure involved in the formation and evolution of stars.
5. Engage this area of astronomy with an active scientific literacy, which includes use of public resources widely available as part of large scale astronomy investigation.
6. Think and communicate an elementary understanding of spectroscopy, light and light intensity, and drawing conclusions from observational data about possible explanations of physical properties of stars.

7. Formulate questions to move their thinking forward concerning the subject matter of the class.

8. Think and communicate with a familiarity with elementary applications of basic observational information involving the structures of stars and star-forming systems as well as black holes and other stellar remnants.

9. Be aware of possible uses and impacts of this physics knowledge.

10. Converse and write about the nature of science with increased sophistication and see physics/astronomy as a science, rather than a body of knowledge.

11. Appreciate that the insights provided by Classical Mechanics, Nuclear Physics, Electricity and Magnetism, and Thermodynamics are valuable and useful even though physics has developed beyond Classical Mechanics and beyond mechanical theories - of which Classical Mechanics is a premier example.

12. Appreciate current efforts to create new insights in this area of astronomy and have a sense of currently open questions within the astrophysics community.

ASTR 123 - Cosmology and the Large-Scale Structure of the Universe

4 Credit(s)

ASTR 123 focuses on the search for understanding of the nature of the Milky Way galaxy, Normal Galaxies, Active Galaxies and Quasars, Life in the Universe, and Cosmology including the Big Bang, the geometry of space-time, the cosmic background radiation, Dark Matter and Dark Energy. Lab included.

Prerequisite: MTH 052 or higher.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Think and communicate based on familiarity with a wide variety of physical phenomena involving galaxies and cosmology and the means by which they are described and explained.
2. Think and communicate based on familiarity, in part through direct practice, with observational tools, chains of reasoning and exploration and knowledge of scientific methods that are part of the practice of this area of astronomy.
3. Correctly use elementary physics concepts regarding galaxies and cosmology in some simple situations, and think and communicate with a significant basic conceptual understanding of galaxies and the big bang theory.
4. Converse and comprehend through communication using elementary descriptions and dynamical laws involved in the evolution of galaxies and the universe.
5. Engage this area of astronomy with an active scientific literacy, which includes use of public resources widely available as part of large scale astronomy investigation.
6. Think and communicate based on an elementary understanding of observational exploration of the large scale structure and evolution of the universe and the search for extra-terrestrial life, drawing conclusions from experimental data about possible explanations of the current state and evolution of the universe and extra-terrestrial life.
7. Formulate questions to move their thinking forward concerning the subject matter of the class.
8. Think and communicate with a familiarity with elementary applications of basic Classical Mechanics concepts, as well as an introduction to elementary particle physics and interplay between basic forces, and theories involving General Relativity and the curvature of space-time.
9. Reflect and communicate on possible uses and impacts of this physics knowledge regarding cosmology and the large scale structure of the universe.
10. Converse and write about the nature of science with increased sophistication and see physics as a science, rather than a body of knowledge.
11. Appreciate that the insights provided by Classical Mechanics are valuable and useful even though physics has developed beyond Classical Mechanics and beyond mechanical theories - of which Classical Mechanics is a premier example, and appreciate that astronomical measurement is currently used to test General Relativity and explore Dark Matter and Dark Energy.
12. Appreciate current efforts to create new insights in this area of astronomy and have a sense of currently open questions within the astrophysics community.

Audio Production

AUD 120 - Audio Production

4 Credit(s)

Basic theories and practices of audio production and post production techniques for time-based media. This includes the use of microphones, mobile recorders, digital audio workstations and understanding studio concepts. Topics covered: mobile recording, foley artistry, and automatic dialogue replacement. Students gain an understanding of sound capture and manipulation through

demonstrations, practical hands-on exercises and recording assignments.

Prerequisite: MUL 103 or MUS 118 or equivalent skill set

Learning Outcomes

Students who successfully complete this course will be able to:

1. Recognize the relationship between image and sound and how it impacts the viewer
2. Create well thought out audio production sessions using industry standard software
3. Use foundational knowledge and skills in sound capture techniques
4. Apply foundational skills in using professional audio gear including microphones, field recorders, audio interfaces, and studio components
5. Have a working knowledge of field recording, Foley artistry and automatic dialogue replacement
6. Apply basic skills in audio editing, signal processing, mixing and mastering

Automotive

AM 143 - Brakes

1-8 Credit(s)

Braking systems found on passenger cars and light trucks. Design, function, diagnostic and repair procedures, including theory and laboratory experience in brake system fundamentals, brake safety, master cylinders, power-assist units, hydraulic lines and valves, disc brakes, drum brakes, antilock braking systems, parking brakes, and brake electrical and electronic components.

Learning Outcomes

Upon completion of this course, the successful student will be able to:

1. Identify the relationship between parts and the components and the purpose of the components in the structure of the vehicle.
2. Demonstrate good workmanship including such characteristics as responsibility, reliability, and proper attitudes.
3. Illustrate manipulative skills to the limit of the student's ability producing proper procedure and work patterns in skill development.
4. Coordinate the acquired knowledge and the skilled application.
5. Perform hydraulic system, drum brake, disc brake, power assist unit, and antilock brake system diagnosis and repair.

AM 145 - Engine Repair

1-12 Credit(s)

Engines found in passenger cars and light trucks. Design, function, diagnostic and repair procedures for cylinder heads, engine blocks and internal parts, lubrication and cooling systems, gaskets and seals, and measurement and machining procedures commonly performed in repair shops.

Learning Outcomes

Upon completion of this course, the successful student will be able to:

1. Explain the operation and design characteristics of automotive internal combustion engines.
2. Perform general engine diagnosis procedures and interpret the results.
3. Perform cylinder head and valve train diagnosis and repair procedures.
4. Perform engine block diagnosis and repair procedures.
5. Diagnose and repair lubrication and cooling systems

AM 147 - Suspension and Steering

1-6 Credit(s)

Design, function, diagnosis, repair and replacement of steering and suspension components used in passenger cars and light trucks including wheel balancing, front-end alignment, and shock absorber service.

Prerequisite/Corequisite: AM 149

Learning Outcomes

Upon completion of this course, the successful student will be able to:

1. Demonstrate diagnostic and repair procedures for steering and suspension components in common automotive use
2. Explain the function of various steering and suspension systems
3. Demonstrate tire and wheel repair and balance procedures
4. Demonstrate suspension alignment procedures
5. Explain the design and function of various power assist steering systems
6. Perform steering system; suspension system; and wheels and tires diagnosis and repair
7. Perform wheel alignment diagnosis, adjustment, and repair
8. Perform frame service and repair

AM 149 - Manual Drive Trains and Axles

1-6 Credit(s)

Manual transmissions and transaxles and other drive train components. Included are design, function, diagnosis, service and overhaul procedures for manual transmissions, differentials, clutches, drive shafts and axles. Also covered are four wheel drive and all wheel drive components.

Prerequisite/Corequisite: AM 147

Learning Outcomes

Upon completion of this course, the successful student will be able to:

1. Demonstrate diagnostic and repair procedures for clutches; transmissions; transaxles; and rear axles and four-wheel drive components
2. Explain gear ratio and gear design theory
3. Demonstrate service and adjustment procedures for manual drive train components
4. Remove and replace drive train components
5. Perform drive shaft and half shaft universal and constant velocity joint repair

AM 242 - Automatic Transmissions/ Transaxles

1-12 Credit(s)

Automatic transmissions and transaxles used in passenger cars and light trucks. Design, function, diagnosis, service and overhaul procedures, principles of hydraulics as applied to automatic transmissions, planetary gear theory and principles, torque converter design and function, and basic electronic controls.

Learning Outcomes

Upon completion of this course, the successful student will be able to:

1. Explain the operation of hydraulic systems as applied to automatic transmissions and transaxles.
2. Explain planetary gear operation and usage in automatic transmissions and transaxles.
3. Explain the function and usage of friction and reaction components in automatic transmissions and transaxles.
4. Identify electronic control devices used in automatic transmissions and transaxles.
5. Demonstrate maintenance procedures and in-vehicle repairs and adjustments.
6. Demonstrate in-vehicle diagnosis using commonly accepted tools and procedures.

AM 243 - Electrical and Electronic Systems

1-12 Credit(s)

Automotive electrical and electronic systems. Theories and principles used to operate, diagnose, test, and repair systems. Included: basic theories; electric components; wiring and circuit diagrams; automotive batteries; DC motors and the starting systems; charging systems; ignition systems; lighting circuits; conventional analog instrumentation, indicator lights, and wiring devices; electrical accessories; introduction to body computer systems; advance lighting circuits and electronic instrumentation; and chassis electronic control systems.

Learning Outcomes

Upon completion of this course, the successful student will be able to:

1. Explain the operation of electrical components and the systems in which the components operate.
2. Demonstrate good craftsmanship.
3. Select and use applicable service manuals and reference material when diagnosing and making repairs to electrical systems.
4. Troubleshoot basic electrical system problems.
5. Use the appropriate test equipment when troubleshooting electrical systems and determine the alternate methods of troubleshooting.
6. Overhaul and calibrate various electrical system components.
7. Properly perform a complete electrical system tune-up.
8. Perform general electrical system diagnosis.
9. Perform battery diagnosis and service.
10. Perform starting system; charging system; lighting system; gauges, warning devices, and driver information systems; and accessories diagnosis and repair.

AM 244 - Engine Performance

1-12 Credit(s)

Automotive engine systems. Theories and principles used to operate, diagnose, test, and repair systems. Included: engine design and operation; engine cooling and lubrication systems; intake and exhaust systems; introduction to engine tune-up; computers and input sensors; ignition systems; conventional and computer controlled carburetors; electronic fuel injection systems; vehicle emission control systems; scope and gas analysis; and turbo chargers and super chargers.

Learning Outcomes

Upon completion of this course, the successful student will be able to:

1. Illustrate and identify the development and principles of fuel systems components, carburetion, emission control systems, fuels, and electronic engine controls as related to the internal combustion engine.
2. Identify the critical importance of the fuel delivery system, in terms of performance and economy as related to the internal combustion engine.
3. Demonstrate the use of the test equipment and techniques required to diagnose fuel system troubles, leading to the manipulative skills required to perform necessary repairs as a result of the diagnosis.
4. Demonstrate good craftsmanship.
5. Select and use applicable service manuals and reference material when diagnosing and making repairs to fuel systems.

AM 246 - Heating and Air Conditioning

1-4 Credit(s)

Automotive heating and air conditioning systems. Theories and principles used to operate, diagnose, test, and repair systems. Included: temperature and pressure fundamentals; the refrigeration system; system components; compressors and clutches; system servicing, testing, and diagnosing; case and duct systems; retrofit CFC-12 to HFC-134a; system controls; and engine cooling and comfort heating systems.

Learning Outcomes

Upon completion of this course, the successful student will be able to:

1. Identify the relationship between parts and the components and the purpose of the components in the structure of the vehicle.
2. Demonstrate good workmanship including such characteristics as responsibility, reliability, and proper attitudes.
3. Illustrate manipulative skills to the limit of the student's ability producing proper procedure and work patterns in skill development.
4. Coordinate the acquired knowledge and the skilled application.
5. Diagnose and repair air conditioning systems; refrigeration system components; heating and engine cooling systems; and operating systems and related controls.
6. Handle, recover, and recycle refrigerant.

Aviation Maintenance

AV 251 - General 101

6 Credit(s)

Physics, material and processes, metal heat treatment, non-destructive testing (dye penetrant, eddy current, ultrasound and magnetic particle inspection), hardware identification, precision measurement, fabricate rigid and flexible fluid lines, corrosion identification and control.

Prerequisite: RD 087 and MTH 020 OR higher OR Prior College OR placement test.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Understand and apply principles of basic physics as it pertains to aviation maintenance
2. Identify, evaluate, determine proper actions in regards to materials and processes
3. Fabricate and install various fluid lines and fittings
4. Identify and treat various corrosion types and apply proper cleaning techniques

AV 252 - General 102

6 Credit(s)

Maintenance publications, maintenance forms and records, mechanic privileges and limitations, airframe and engine inspection, ground operations and aircraft drawings.

Prerequisite: RD 087 and MTH 020 OR higher OR Prior College OR placement test.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Read, comprehend, and apply information contained in various aircraft publications and schematics
2. Correctly record work performed in accordance with FAA regulations
3. Use, read, and interpret symbols, schematics, blueprints, and graphs
4. Understand the privileges and limitations described in F.A.R. Part 65
5. Start, move, service, and secure aircraft

AV 253 - General 103

6 Credit(s)

Basic electricity; measure voltage, current and resistance, determine relationship of voltage, current and resistance in electrical circuits, calculate and measure electrical power, calculate and measure capacitance and inductance, read and interpret aircraft electrical circuit diagrams, inspect and service batteries.

Prerequisite: RD 087 and MTH 020 OR higher OR Prior College OR placement test.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Measure voltage, current, resistance, and continuity
2. Read and interpret aircraft electrical circuit diagrams
3. Inspect and service batteries

AV 254 - General 104

6 Credit(s)

Inspect, troubleshoot and repair aircraft and engine and airframe electrical systems, install and service engine and airframe electrical wiring, controls, switches indicators and protective devices, inspect, troubleshoot constant speed and integrated speed drive generators, read and interpret aircraft electrical circuit diagrams including solid state devices and logic functions.

Prerequisite: RD 087 and MTH 020 OR higher OR Prior College OR placement test.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Inspect and repair aircraft electrical system components
2. Inspect, service, and install electrical wiring and related components
3. Inspect, check, troubleshoot, service, and repair alternating and direct current electrical systems
4. Repair engine electrical systems and components

AV 255 - General 105

6 Credit(s)

Aircraft fuel systems, aircraft and engine instrument systems, aircraft and engine fire protection systems, weight and balance.

Prerequisite: RD 087 and MTH 020 OR higher OR Prior College OR placement test.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Inspect, service, and repair aircraft fuel systems
2. Inspect, service, and repair flight instruments
3. Inspect, service, and repair engine instruments
4. Inspect, service, and repair aircraft and engine fire protection systems
5. Perform aircraft weight and balance calculations

AV 261 - Airframe 1

6 Credit(s)

Assembly and rigging, ice and rain control systems, communication and navigation systems, welding.

Prerequisite: RD 087 and MTH 020 OR higher OR Prior College OR placement test.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Balance, rig, inspect, and assemble aircraft flight control surfaces
2. Inspect, service, and repair ice/rain control systems
3. Inspect, service, and repair communications and navigation systems
4. Solder, braze, gas-weld and arc-weld various materials

AV 262 - Airframe 2

6 Credit(s)

Position and warning systems, aircraft landing gear systems, hydraulic and pneumatic power systems.

Prerequisite: RD 087 and MTH 020 OR higher OR prior college OR placement test.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Inspect, service, and repair various position and warning systems
2. Inspect, service, and repair aircraft landing gear systems
3. Inspect, service, and repair various hydraulic and pneumatic power systems

AV 263 - Airframe 3

6 Credit(s)

Inspect and repair sheet metal structures, install conventional rivets, form, layout and bend sheet metal.

Prerequisite: RD 087 and MTH 020 OR higher OR prior college OR placement test.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Form, layout, and bend sheet metal
2. Install conventional rivets
3. Inspect, service, and repair various sheet metal structures

AV 264 - Airframe 4

6 Credit(s)

Wood structures, aircraft covering, non-metallic structures, aircraft finishes, cabin atmosphere and control systems.

Prerequisite: RD 087 and MTH 020 OR higher OR prior college OR placement test.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Inspect, service, and repair various wood structures
2. Inspect, service, and install various aircraft coverings
3. Inspect, service, and repair various non-metallic structures
4. Identify, select, and apply various aircraft finishes
5. Inspect, service, and repair various cabin atmospheric control systems

AV 271 - Powerplant 1

6 Credit(s)

Inspect, check, troubleshoot, service, repair and overhaul reciprocating engines, remove and install reciprocating engines, inspect and repair a radial engine.

Prerequisite: RD 087 and MTH 020 OR higher OR prior college OR placement test.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Inspect, service, and repair radial engines
2. Inspect, service, and repair reciprocating engines
3. Overhaul reciprocating engines

AV 272 - Powerplant 2

6 Credit(s)

Inspect, check, troubleshoot, service, repair and overhaul turbine engines and auxiliary power units, remove and install turbine engines.

Prerequisite: RD 087 and MTH 020 OR higher OR prior college OR placement test.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Inspect, service, and repair turbine engines
2. Overhaul turbine engines
3. Inspect, service, and repair auxiliary power units

AV 273 - Powerplant 3

6 Credit(s)

Induction and engine airflow systems, engine exhaust and reverser systems, ignition and starting systems, engine cooling systems.

Prerequisite: RD 087 and MTH 020 OR higher OR prior college OR placement test.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Inspect, service, and repair induction and engine airflow systems
2. Inspect, service, and repair engine exhaust and reverser systems
3. Inspect, service, repair, and overhaul ignition and starting systems
4. Inspect, service, and repair engine cooling systems

AV 274 - Powerplant 4

6 Credit(s)

Fuel metering, propellers and unducted fans, lubrication systems.

Prerequisite: RD 087 and MTH 020 OR higher OR prior college OR placement test.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Troubleshoot, adjust, inspect, repair, and overhaul fuel metering systems

2. Inspect, service, balance, and repair propellers and unducted fans

3. Identify, inspect, service, and repair engine lubrication systems

AV 282 - Airframe Return to Service

6 Credit(s)

This Airframe capstone course provides diversified projects, supervised field experience and FAA examination review for graduating students seeking their Mechanic Certificate with Airframe Rating. Projects include, but are not limited to, 100 Hour aircraft inspections, flight control rigging, aircraft electrical troubleshooting and repair, aircraft weighing, use of maintenance forms and records, and interpretation federal aviation regulations.

Prerequisite: AV 251, AV 252, AV 253, AV 254, AV 255, AV 261, AV 262, AV 263, AV 264, AV 271, AV 272, AV 273, AV 274; AND MTH 075 and MTH 085

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Integrate and apply the skills acquired in the General and Airframe courses

AV 283 - Powerplant Return to Service

6 Credit(s)

This Powerplant capstone course provides diversified projects, supervised field experience and FAA examination review for graduating students seeking their Mechanic Certificate with Powerplant Rating. Projects include, but are not limited to, 100 Hour powerplant inspections, engine and propeller troubleshooting and repair, engine electrical system troubleshooting and repair, ignition system inspection and adjustment, exhaust system inspection and repair, use of maintenance forms and records, and interpretation of federal aviation regulations.

Prerequisite: AV 251, AV 252, AV 253, AV 254, AV 255, AV 261, AV 262, AV 263, AV 264, AV 271, AV 272, AV 273, AV 274; AND MTH 075 and MTH 085

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Integrate and apply the skills acquired in the General and Powerplant courses

Aviation Pilot

AP 110A - Flight Lab - Pre-Solo

1 Credit(s)

Part 61 pre-solo flight training for students under 180 pounds in weight and 6'2" in height.

Learning Outcomes

Students will develop aeronautical knowledge and flight proficiency for all FAA pre-solo requirements.

AP 110B - Flight Lab - Pre-Solo

1 Credit(s)

Part 61 pre-solo flight training for students at or over 180 pounds in weight and 6'2" in height.

Learning Outcomes

Students will develop aeronautical knowledge and flight proficiency for all FAA pre-solo requirements.

AP 112 - Private Pilot Ground School

5 Credit(s)

Part 141 private pilot ground training.

Corequisite: AP 113

Learning Outcomes

Students will be eligible to take the FAA Private Pilot Airplane Single-Engine Land written test. Students will also be prepared for the oral portion of the FAA Practical Test.

AP 113 - Airman Certification Standards and Maneuvers

1 Credit(s)

Breakdown of private pilot flight maneuvers and the Airman Certification Standards of each.

Corequisite: AP 112

Learning Outcomes

Students will understand the elements for each private pilot flight maneuver and the Airman Certification Standards that are associated with each maneuver.

AP 115 - Intro to Aviation and Careers

1 Credit(s)

An introduction to aviation industries and career areas, both flying and non-flying, as presented by a variety of guest speakers from the aviation industry and online course work. Class attendance during in-person sessions is mandatory for credit; this is not a graded course.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Effectively determine different career paths and options within the aviation industry

AP 116 - Aviation History

4 Credit(s)

In depth study of aviation history. From the dreams of Leonardo da Vinci to the reality of fighter jets. Primary focus is on the invention and advancement of aircraft and the careers that followed.

Learning Outcomes

Identify, analyze, and correlate the evolution of human flight, the driving forces behind change, and the development of new systems, designs, and regulations to the future of the aviation industry.

AP 120A - Flight Lab - Private Pilot Certificate

1 Credit(s)

Part 61 private pilot flight training for students under 180 pounds in weight and 6'2" in height.

Prerequisite: AP 110A

Learning Outcomes

Students will be eligible to take the FAA Private Pilot Single-Engine Land Practical Test.

AP 120B - Flight Lab - Private Pilot Certificate

1 Credit(s)

Part 61 private pilot flight training for students at or over 180 pounds in weight and 6'2" in height.

Prerequisite: AP 110B

Learning Outcomes

Students will be eligible to take the FAA Private Pilot Single-Engine Land Practical Test.

AP 121 - Simulator Lab - Private

1 Credit(s)

Part 61 private pilot simulator training.

Learning Outcomes

Student will be able to conduct simulated private pilot VFR flight maneuvers to FAA Airman Certification Standards.

AP 125 - Aircraft Systems & Structures 1

2 Credit(s)

In depth study of small fixed-wing aircraft systems.

Learning Outcomes

Identify, understand, and verify proper condition of small fixed wing aircraft and accurately respond to failures during emergency operations.

AP 126 - Aviation Weather Services

2 Credit(s)

In depth study of weather reporting available to pilots on the aviationweather.gov website.

Learning Outcomes

Read and interpret a variety of weather reports and charts and forecast weather conditions for flight operations.

AP 127 - Aerodynamics

3 Credit(s)

An analysis of the physics of flight; the characteristics of high-speed and low-speed flight and the effects of pressure, altitude, weight, center of gravity, and airfoil design on aircraft performance.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Understand and correlate the aerodynamic principals and physics behind lift

AP 130 - Flight lab - Attitude Control

1 Credit(s)

Part 61 attitude instrument flight training.

Prerequisite: AP 120A or AP 120B

Learning Outcomes

Students will be able to precisely control an aircraft solely by reference to the aircraft instruments, and have a basic understanding of instrument navigation using VOR and GPS navigation aids.

AP 132 - Instrument Ground School

5 Credit(s)

Part 141 instrument ground training.

Corequisite: AP 135

Learning Outcomes

Students will be eligible to take the FAA Instrument Airplane written test. Students will also be prepared for the oral portion of the FAA Practical Test.

AP 135 - Advanced Avionics

1 Credit(s)

Hands on advanced GPS lab.

Corequisite: AP 132

Learning Outcomes

Students will be able to start, verify, load, and modify flights on advanced aviation GPS systems.

AP 140 - Flight Lab - Instrument Rating

1 Credit(s)

Part 61 instrument rating flight training.

Prerequisite: AP 120A or AP 120B

Learning Outcomes

Students will be eligible to take the FAA Instrument Airplane Practical Test.

AP 141 - Simulator Lab - Instrument

1 Credit(s)

Part 61 instrument simulator training.

Learning Outcomes

Students will be able to conduct simulated instrument approaches, hold, tracking, and cross-country flights to FAA Airman Certification Standards.

AP 210 - Flight Lab - Cross-Country

1 Credit(s)

Part 61 commercial cross-county flight training.

Prerequisite: AP 120A or AP 120B

Learning Outcomes

Students will be able to conduct professional cross-country flights within FAA Airman Certification Standards.

AP 212 - Commercial Pilot Ground School

5 Credit(s)

Part 141 commercial pilot ground training.

Learning Outcomes

Students will be eligible to take the FAA Commercial Pilot Single-Engine Land written test. Students will also be prepared for the oral portion of the FAA Practical Test.

AP 215 - Aircraft Systems & Structures 2

2 Credit(s)

In depth study of advanced fixed-wing aircraft systems including hydraulics, fly-by-wire, and turbine-engines.

Learning Outcomes

Identify and understand advanced aircraft systems and accurately respond to failures during emergency operations.

AP 220 - Flight Lab - Maneuvers

1 Credit(s)

Part 61 commercial maneuvers flight training.

Prerequisite: AP 120A or AP 120B

Learning Outcomes

Students will be able to conduct commercial pilot flight maneuvers within FAA Airman Certification Standards.

AP 221 - Simulator Lab - Commercial

1 Credit(s)

Part 61 commercial pilot simulator training.

Learning Outcomes

Students will be able to conduct simulated commercial pilot flight maneuvers to FAA Airman Certification Standards.

AP 222 - CFI/CFII Ground School

3 Credit(s)

Part 61 CFI/CFII ground training.

Corequisite: AP 225

Learning Outcomes

Students will be eligible to take the FAA Certified Flight Instructor and Certified

Flight Instructor - Instrument written test. Students will also be prepared for the oral portion of the FAA Practical Test.

AP 225 - FOI & Human Factors

3 Credit(s)

Study of psychological principles related to the human learning process with methods to improve instructor effectiveness. Human factors including hazardous attitudes, fatigue, human error, decision making, cockpit design and ergonomics of the person/machine interface are covered. Studies Crew Resource Management to improve crew coordination and situational awareness.

Corequisite: AP 222

Learning Outcomes

Students who successfully complete this course will be able to:

1. Apply different learning theories to practice as Certified Flight Instructors to fit the needs of the individual
2. Be prepared for the Federal Aviation Administration's Fundamentals of Instruction written test, and the oral portion of the Federal Aviation Administration's Practical Test section pertaining to Fundamentals of Instruction

AP 230 - Flight Lab - Commercial Pilot Certificate

1 Credit(s)

Part 61 commercial pilot flight training.

Prerequisite: AP 120A or AP 120B, AP 130, AP 140, AP 210, and AP 220

Learning Outcomes

Students will be eligible to take the FAA Commercial Pilot Practical Test.

AP 232 - Multi-Engine Ground School

2 Credit(s)

A two part multi-engine course: Part 1 develops the understanding of multi-engine airplane systems and basics of multi-engine airplane flight operations including emergency procedures. Part 2 develops advanced multi-engine airplane systems and operation. Multi-engine airplane operational procedures training including both normal and emergency procedures skills development.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Understand the differences between single-engine and multi-engine aircraft operations and systems
2. Apply course content to multi-engine flight training and be prepared for the oral portion of the Federal Aviation Administration's Multi-Engine Land Rating Practical Test

AP 235 - Accident Investigations

3 Credit(s)

Study and analysis of landmark accidents, their investigation, and aftermath to include technology development, procedural improvements, crew interaction (CRM and ORM), and regulatory developments that have improved flight safety.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Identify physical and psychological failures before they become emergencies by learning from the mistakes of others

AP 240 - Flight Lab - Multi-Engine Rating & CFI/CFII Certificate

1 Credit(s)

Part 61 multi-engine, CFI, and CFII flight training.

Prerequisite: AP 230, AP 222, AP 225, AP 212

Learning Outcomes

Students will be eligible to take the FAA Multi-Engine Land, Certified Flight Instructor, and Certified Flight Instructor - Instrument Practical Tests.

Biology

Students may only use one BI 101, one BI 102, and one BI 103 to meet requirements for any Lane degree, regardless of the letter option. Additional BI 101, BI 102, and BI 103 courses will count as electives.

BI 101 - General Biology

4 Credit(s)

BI 101 topics: atoms, molecules, cellular processes, genetics, protein synthesis, photosynthesis, respiration. Lab included. Only one BI 101 can be used to meet requirements for any Lane degree, regardless of letter option.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply scientific inquiry to biological sciences concepts
2. Describe the steps involved in scientific inquiry and distinguish between a hypothesis and a theory

3. Develop a vocabulary of appropriate terminology to effectively communicate information concepts in cell biology
4. Evaluate and critique scientific information from various sources (journals, magazines, newspapers, television, and the internet) for scientific reliability and validity
5. Model the flow of information: the flow from genetic information (DNA) to phenotype (physical traits)
6. Describe the role of evolution at a cellular and molecular level
7. Apply concepts of Biology and Chemistry to understand metabolic pathways
8. Relate scientific technologies to their impact on various areas of society such as medicine, industry, environment, and agriculture
9. Diagram a cell and explain the role of the major components of the cell, including how the components work together for cell function and replication
10. Describe patterns of inheritance based on meiosis
11. Identify sources of genetic variation based on mutation, meiotic processes and sexual reproduction

BI 101E - General Biology-Ocean Life Foundations

4 Credit(s)

Basic cellular and organismal processes. Emphasis on how marine organisms demonstrate processes and systems that involve photosynthesis, respiration, cell division, genetics, cell structure and protein synthesis. Includes influences of physical, chemical, and geological oceanography on ocean life. Includes a field trip to the coast.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply scientific inquiry to biological science concepts
2. Describe the steps involved in scientific inquiry and distinguish between a hypothesis and a theory
3. Develop a vocabulary of appropriate terminology to effectively communicate information concepts in cell biology
4. Read and think critically about scientific data, graphs, and literature
5. Identify and describe underwater geological formations and how those formations relate to the evolution of unique species
6. Describe the chemical and physical properties of seawater and the flow of ocean currents
7. Describe the role of evolution at a cellular and molecular level
8. Diagram a cell and explain the role of the major components of the cell, including how the components work together for cell function and replication
9. Apply concepts of biology and chemistry to understand metabolic pathways
10. Describe patterns of inheritance based on meiosis
11. Identify sources of genetic variation based on mutation, meiotic processes, and sexual reproduction
12. Model the flow of information: the flow from genetic information (DNA) to phenotype (physical traits)
13. Make connections between biology, ocean ecosystems, and your own life

BI 101F - General Biology-Survey of Biology

4 Credit(s)

Survey course providing an overview of the molecular, genetic and cellular basis of life. Activities: lab, computer activities, lecture, group projects, and discussion. Includes current issues such as genetic testing, genetic engineering, and cancer.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply scientific inquiry to biological sciences concepts.
2. Describe the steps involved in scientific inquiry and distinguish between a hypothesis and a theory.
3. Develop a vocabulary of appropriate terminology to effectively communicate information concepts in cell biology.
4. Evaluate and critique scientific information from various sources (journals, magazines, newspapers, television, and the internet) for scientific reliability and validity.
5. Model the flow of information: the flow from genetic information (DNA) to phenotype (physical traits).
6. Describe the role of evolution at a cellular and molecular level.
7. Apply concepts of Biology and Chemistry to understand metabolic pathways.
8. Relate scientific technologies to their impact on various areas of society such as medicine, industry, environment, and agriculture.
9. Diagram a cell and explain the role of the major components of the cell, including how the components work together for cell function and replication.
10. Describe patterns of inheritance based on meiosis.
11. Identify sources of genetic variation based on mutation, meiotic processes and sexual reproduction.

BI 101I - General Biology-Botanical Beginnings

4 Credit(s)

Students learn cellular and organism plant biology. Topics: characteristics that distinguish plants from other organisms, plant anatomy, cell structures, chemistry, photosynthesis, respiration, cell division, roles plants play in our lives. Skills: microscopy, extensive lab observations.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply scientific inquiry to biological sciences concepts.
2. Describe the diversity of plant life and differentiate between plants and other organisms.
3. Evaluate and critique scientific information from various sources (journals, magazines, newspapers, television, and the internet) for scientific reliability and validity.
4. Understand and describe how plant design relates to its function and ecosystem structure.
5. Examine the role of coevolution between plants and humans, and distinguish between natural and artificial selection.
6. Develop a vocabulary of appropriate terminology to effectively communicate information related to cell biology.
7. Describe the steps involved in scientific inquiry and distinguish between a hypothesis and a theory.
8. Apply concepts of Biology and Chemistry to understand metabolic pathways with an emphasis on photosynthesis and carbon cycling.
9. Relate plant sciences technologies to their impact on various areas of society such as medicine, industry, environment, and agriculture.
10. Diagram a plant cell and explain the role of the major components of the cell, including how the components work together for cell function and replication.
11. Diagram plant life cycles and identify events and processes related to the alteration of generations.
12. Describe patterns of inheritance based on meiosis and model the flow of genetic information from genotype (DNA) to phenotype (physical traits).

BI 101J - General Biology-Unseen Life on Earth

4 Credit(s)

An introduction to the cellular biology of the smallest organisms on earth. Microbes are crucial to human health, food supplies and the survival of all life forms. Students explore the diversity and contributions of microbes such as bacteria, fungi, and viruses. Online course with lab activities conducted at home.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply scientific inquiry to biological sciences concepts.
2. Describe the steps involved in scientific inquiry and distinguish between a hypothesis and a theory.
3. Develop a vocabulary of appropriate terminology to effectively communicate information related to microbial concepts.
4. Evaluate and critique scientific information from various sources (journals, magazines, newspapers, television, and the internet) for scientific reliability and validity.
5. Model the flow of information: the flow from genetic information (DNA) to phenotype (physical traits).
6. Apply concepts of Biology and Chemistry to understand DNA replication and protein synthesis.
7. Identify sources of genetic variation based on mutation, transformation, transduction and conjugation.
8. Describe the role of evolution at a cellular and molecular level.
9. Relate scientific technologies (Gene Therapy, Bioremediation, and Fermentation) to their impact on various areas of society such as medicine, industry, environment, and agriculture.
10. Diagram eukaryotic and prokaryotic cells and explain the role of the major components of the cell, including how the components work together for cell function and replication.
11. Describe the role of microbes in food manufacturing, industry and ecology.
12. Recognize and explain the role of microorganisms in human health and disease.

BI 101K - General Biology: Introduction to Genetics

4 Credit(s)

This course introduces students to the rapidly evolving and increasingly relevant world of genetics. Topics: cell structure and division, DNA structure, protein synthesis, modern genetic technologies and societal applications and implications. Labs include microscope work, problem solving.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Apply scientific inquiry to biological sciences concepts
2. Describe the steps involved in scientific inquiry and distinguish between a hypothesis and a theory
3. Develop a vocabulary of appropriate terminology to effectively communicate information related to human genetics and inheritance
4. Evaluate and critique scientific information from various sources (journals, magazines, newspapers, television, and the internet) for scientific reliability and validity
5. Model the flow of information: the flow from genetic information (DNA) to phenotype (physical traits)
6. Describe the role of evolution at a cellular and molecular level
7. Apply concepts of Biology and Chemistry to understand DNA replication and protein synthesis
8. Relate genetic technologies (cloning, GMO, Gene Therapy) to their impact on various areas of society such as medicine, industry, environment, and agriculture
9. Diagram a cell and explain the role of the major components of the cell, including how the components work together for cell function and replication
10. Identify sources of genetic variation based on mutation, meiotic processes and sexual reproduction

BI 102 - General Biology

4 Credit(s)

BI 102 topics: homeostasis, feedback loops, and body systems. Lab included.

Only one BI 102 can be used to meet requirements for any Lane degree, regardless of letter option.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply Scientific inquiry to biological systems
2. Make a flow chart and describe the evolution of multicellularity: from cell to tissue to organ to organ system
3. Accurately describe, illustrate, and explain the structure and function of different tissue types
4. Model homeostasis and demonstrate both positive and negative feedback loops in biological systems
5. Apply generalized models of homeostasis to new situations
6. Accurately describe, illustrate and explain the anatomy and physiology of at least 3 of the following 7 organ systems: nutrients, circulation, gas exchange, reproduction and development, signaling, defense, support and locomotion
7. Compare and contrast how the above systems work in a variety of different organisms
8. Evaluate and critique scientific information from various sources for reliability and validity (journals, magazines, newspapers, television, and the internet)
9. Analyze and evaluate case studies of diseases as they relate to the different organ systems

BI 102C - General Biology-Marine Biology

4 Credit(s)

Overview of the structure and function of tissues, organs, and organ systems in marine invertebrate phyla and selected marine vertebrates like fish and sharks. Examines how organisms maintain homeostasis in various conditions. Includes a field trip to the coast.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Demonstrate how various organisms function at the cell tissue, organ system levels. Describe special challenges faced by marine organisms related to gas exchange, nitrogenous waste removal and other physiological functions. Explain counter-current flow in gills and other systems.
2. Model homeostasis and feedback loops in biological systems, such as alternate blood-flow pathways to adjust to different temperature extremes, adaptations for maintaining ion balance in the face of diffusion and osmosis in salt and fresh-water environments.

3. Accurately describe, illustrate and explain the anatomy and physiology of different marine phyla, including sponges, anemones and other cnidarians, worms, mollusks, arthropods, echinoderms and chordates. Describe unique attributes and development of each organ system in various taxa.
4. Compare and contrast how the above systems work in such different organisms as rotifers and fish, corals and squid, and many others. Describe the selective pressures favoring organ system adaptations.
5. Evaluate and critique scientific information from various sources (journals, magazines, newspapers, television, and the internet) for reliability and validity. Develop internet search skills to find reliable information to use.
6. Develop a scientific inquiry project using a research question and hypothesis about system level adaptations in a comparison of different taxa of marine organisms.

BI 102D - General Biology-Survey of Biology

4 Credit(s)

Survey course providing an overview of structure and function of tissues, organs, and organ systems. Activities: lab, computer activities, lecture, group projects, and discussion. Includes current issues such as diabetes, epidemics.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply Scientific inquiry to biological systems
2. Make a flow chart and describe the evolution of multicellularity: from cell to tissue to organ to organ system
3. Accurately describe, illustrate, and explain the structure and function of different tissue types
4. Model homeostasis and demonstrate both positive and negative feedback loops in biological systems
5. Apply generalized models of homeostasis to new situations
6. Accurately describe, illustrate and explain the anatomy and physiology of at least 3 of the following 7 organ systems: nutrients, circulation, gas exchange, reproduction and development, signaling, defense, support and locomotion
7. Compare and contrast how the above systems work in a variety of different organisms.
8. Evaluate and critique scientific information from various sources for reliability and validity (journals, magazines, newspapers, television, and the internet).
9. Analyze and evaluate case studies of diseases as they relate to the different organ systems.

BI 102E - General Biology-Animal Biology

4 Credit(s)

Students learn the physiology and function of vertebrates: fish, amphibians, reptiles, birds, mammals. Topics: evolution of unique adaptations, comparative anatomy. Activities: lab, lecture, discussion, computer/Web use. Relevant issues: endangered species, habitat loss, pollution, conservation.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply scientific inquiry to biological sciences.
2. Describe the steps involved in scientific inquiry and distinguish between a hypothesis and a theory.
3. Make a flow chart and describe the evolution of vertebrate animals: from cell to tissue to organ to organ system.
4. Accurately describe, illustrate, and explain the structure and function of different tissue types found in vertebrate animals.
5. Model homeostasis and demonstrate both positive and negative feedback loops in biological systems found in vertebrate animals.
6. Apply generalized models of homeostasis to new situations found in vertebrate animals.
7. Accurately describe, illustrate and explain the anatomy and physiology of at least 3 of the following 7 organ systems found in Vertebrate Animals: nutrients, circulation, gas exchange, reproduction and development, signaling, defense, support and locomotion.
8. Compare and contrast how the above systems work in Vertebrate Animals.
9. Evaluate and critique scientific information from various sources for reliability and validity (journals, magazines, newspapers, television, and the internet).
10. Analyze and evaluate Case studies of Vertebrate Animals as they relate to problems with their physiological needs.
11. Engage in logical methodology and communicate via mathematical and graphical models.
12. Describe the phylogenetic relationships among organisms and arrange them on a phylogenetic tree.

13. Describe natural selection and speciation and be able to describe the evolution of a novel trait/species.
14. Relate the structure of phylogenetic trees to the history of biological evolution.

BI 102G - General Biology: Genetics and Society

4 Credit(s)

Students learn human body systems with an emphasis on genetic inheritance patterns, genetic conditions and the systems they affect. Course integrates current issues in genetics and their impact on ethics and values; labs feature problem solving, critical thinking.

Learning Outcomes

Upon completion of this course, students will be able to:

1. Apply Scientific inquiry to biological systems
2. Accurately describe, illustrate and explain the anatomy and physiology of at least 3 of the following 7 organ systems: nutrients, circulation, gas exchange, reproduction and development, signaling, defense, support and locomotion
3. Compare and contrast how the above systems work in a variety of different organisms
4. Evaluate and critique scientific information from various sources for reliability and validity (journals, magazines, newspapers, television, and the internet)
5. Analyze and evaluate case studies of diseases as they relate to the different organ systems and genetics
6. Make and analyze pedigrees for, autosomal dominant, autosomal recessive, X-linked dominant, X-linked recessive traits
7. Use Punnett squares to predict inheritance probabilities
8. Describe and explain the role of the both environment and genetics in complex traits and behaviors
9. Distinguish between sex, gender and sexual orientation and discuss the role of environment and genetics in the development of each

BI 102H - General Biology-Forest Biology

4 Credit(s)

Students learn the structural and physiological adaptations of Northwest forest inhabitants. Emphasis on nutrition, growth, reproduction, and their place in the forest ecosystems. Community service projects and field trips may be required. Lab included.

Learning Outcomes

Upon completion of this course, students will be able to:

1. Apply scientific inquiry to biological systems.
2. Make a flow chart and describe the evolution of multicellularity in plants, fungi and animals.
3. Model homeostasis and feedback loops in biological systems for organisms that live in forests.
4. Accurately describe, illustrate and explain the anatomy and physiology of at least 4 of the following 7 systems for forest organisms: Respiratory system, digestive system, circular system, reproductive system, skeletal, endocrine and urinary.
5. Compare and contrast how the above systems work in a variety of different organisms.
6. Evaluate and critique scientific information from various sources (journals, magazines, newspapers, television, and the internet.) for reliability and validity.
7. Identify common temperate forest plants and animals in young and late successional forests using dichotomous and pictorial keys.

BI 102I - General Biology-Human Biology

4 Credit(s)

Students learn human body systems, including circulatory, respiratory, urinary, reproductive, nervous, muscular, skeletal, lymphatic, digestive, and endocrine systems.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Understand how humans maintain their internal environment
2. Identify ways organisms breathe, digest, excrete, reproduce etc. in widely varying life forms
3. Accurately describe, illustrate and explain the structure and function of different human tissue types
4. Complete experiments that evaluate how an organism breathes, digests, reproduces, etc. and answer questions that show how organisms maintain homeostasis

- Critically examine a scientific article or a newspaper article to evaluate its validity
- Effectively communicate information related to anatomy and physiology utilizing appropriate terminology
- Recognize and identify the anatomical structures; and explain and illustrate the physiological functions of body systems covered in this course
- Deduce associations between theoretical knowledge of anatomy and physiology and applied clinical situations, including healthy lifestyle decisions and homeostatic imbalances
- Analyze and evaluate case studies of diseases as they relate to the different organ systems

BI 103 - General Biology

4 Credit(s)

BI 103 topics: ecology, evolution and the classification and natural history of organisms. Lab included. Only one BI 102 can be used to meet requirements for any Lane degree, regardless of letter option.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

- 1- Apply scientific inquiry to biological sciences
- 2- Describe the steps involved in scientific inquiry and distinguish between a hypothesis and a theory
- 3- Evaluate and critique scientific information from various sources (journals, magazines, newspapers, television, the internet) for scientific reliability and validity
- 4- Engage in logical methodology and communicate via mathematical and graphical models
- 5- Describe the phylogenetic relationships among organisms and arrange them on a phylogenetic tree
- 6- Describe natural selection and speciation and be able to describe the evolution of a novel trait/species
- 7- Relate the structure of phylogenetic trees to the history of biological evolution
- 8- Describe the ecosystematic roles of organisms, populations and communities
- 9- Diagram the flow of energy and matter through ecosystems
- 10- Evaluate selective advantages of various organismal interactions
- 11- Relate patterns of population growth to ecosystem dynamics
- 12- Define sustainable resource use and describe the role of humans in ecosystems
- 13- Make accurate measurements and be proficient at using biological tools such as microscopes, pipettes, etc.

BI 103A - General Biology-Birds of Oregon

4 Credit(s)

Students learn classification, evolution, ecology, and adaptations with emphasis on Oregon birds and their behaviors. Bird identification is practiced on field trips. Current issues: endangered species, climate change and effects of humans on bird populations.

Learning Outcomes

Upon completion of this course, students will be able to:

1. Apply scientific inquiry to biological sciences.
2. Describe the steps involved in scientific inquiry and distinguish between a hypothesis and a theory.
3. Evaluate and critique scientific information from various sources (journals, magazines, newspapers, television, the internet) for scientific reliability and validity.
4. Discuss, describe and explain the concept of evolution as a theory and as a fact, that can be investigated using scientific inquiry.
5. Describe, evaluate, and demonstrate how selective advantages guided and influenced the evolution of a particular species.
6. Describe natural selection and speciation and be able to describe the evolution of a novel trait or particular species/group.
7. Describe the taxonomy and classification of various groups of organisms and apply this process to Avian examples.
8. Describe the ecosystem roles of organisms, populations and communities and apply this concept to Avian examples.
9. Describe and Diagram the flow of energy and matter through ecosystems and apply this concept to Avian examples.
10. Apply in class terminology, identification skills, and knowledge to an outdoor setting with respect to Avian species.
11. Relate patterns of population growth and climate change to ecosystem dynamics and apply this concept to Avian examples.

12. Define sustainable resources use and describe how humans in ecosystems have caused Avian species to become endangered and/or extinct.
13. Make accurate measurements and be proficient at using biological tools such as microscopes.

BI 103D - General Biology: Sea Birds and Mammals

4 Credit(s)

Students learn unique anatomical and physiological adaptations of marine birds and mammals to understand evolutionary processes, ecological interactions, and human impact on populations. Includes a field trip to the coast.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Apply scientific inquiry to biological sciences
2. Describe the steps involved in scientific inquiry and distinguish between a hypothesis and a theory
3. Evaluate and critique scientific information from various sources (journals, magazines, newspapers, television, the internet) for scientific reliability and validity
4. Discuss the Theory of Evolution and defend hypothetical ancestry of marine mammals and sea birds. Describe evolutionary history and supporting evidence, including homologies, evo-devo arguments, and adaptive radiation
5. Evaluate how selective advantages enhanced the evolution of that species
6. Describe natural selection and speciation and be able to describe the evolution of a novel trait/species
7. Describe the taxonomy and classification of various groups of organisms and recent advances in sea bird and mammal cladistics
8. Interpret population dynamic graphs to determine the validity of growth and decline arguments
9. Describe the roles of organisms in populations, communities, and ecosystems
10. Diagram the flow of energy and matter through ecosystems
11. Apply in class terminology and knowledge to an outdoor setting
12. Relate patterns of population growth and climate change to ecosystem dynamics
13. Define sustainable resources use and describe how humans in ecosystems have caused species to become endangered

BI 103E - General Biology: Survey of Biology

4 Credit(s)

Survey course providing an overview of animal and plant diversity, evolution, and ecology. Activities: field trips, lab, lecture, discussion, and group projects. Includes current issues such as human impacts on the natural world.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

- 1- Apply scientific inquiry to biological sciences.
- 2- Describe the steps involved in scientific inquiry and distinguish between a hypothesis and a theory.
- 3- Evaluate and critique scientific information from various sources (journals, magazines, newspapers, television, the internet) for scientific reliability and validity.
- 4- Engage in logical methodology and communicate via mathematical and graphical models.
- 5- Describe the phylogenetic relationships among organisms and arrange them on a phylogenetic tree.
- 6- Describe natural selection and speciation and be able to describe the evolution of a novel trait/species.
- 7- Relate the structure of phylogenetic trees to the history of biological evolution.
- 8- Describe the ecosystematic roles of organisms, populations and communities.
- 9- Diagram the flow of energy and matter through ecosystems.
- 10- Evaluate selective advantages of various organismal interactions.
- 11- Relate patterns of population growth to ecosystem dynamics.
- 12- Define sustainable resource use and describe the role of humans in ecosystems.
- 13- Make accurate measurements and be proficient at using biological tools such as microscopes, pipettes, etc.

BI 103F - General Biology-Wildflowers of Oregon

4 Credit(s)

Students investigate plant diversity, ecological and evolutionary processes, and conservation efforts with emphasis on learning flower characteristics for plant identification. Students practice describing habitats and identifying plants on local field trips to different ecosystems.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Apply scientific inquiry to biological sciences.
2. Describe the steps involved in scientific inquiry and distinguish between a hypothesis and a theory.
3. Evaluate and critique scientific information from various sources (journals, magazines, newspapers, television, the internet) for scientific reliability and validity.
4. Examine a native habitat, describe the plant community and predict the interactions between organisms in that environment.
5. Explain the basis for conservation efforts to save native plants and their habitats and the value of natural restoration efforts.
6. Explain evolutionary processes and selection pressures that lead to flowering plant diversity.
7. Identify useful, edible, and poisonous plants and describe how these relate to human activities.
8. Discuss how the availability of our food (from plants) is related to the plant life cycle.
9. Correctly identify 45-60 different plant families, on sight from key diagnostic characteristics.
10. Describe and illustrate flower and leaf characteristics of an unknown species and apply the use of dichotomous keys for correct identification.
11. Relate patterns of plant population growth to ecosystem dynamics.
12. Evaluate selective advantages of various organismal interactions.

BI 103G - General Biology: Global Ecology

4 Credit(s)

Students learn how different cultures relate to ecological and environmental changes using Oregon as a case study. Emphasis on how the values of American Indians relate to ecological regions and natural environments in Oregon. Includes field trips.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Apply scientific inquiry to biological sciences.
2. Describe the steps involved in scientific inquiry and distinguish between a hypothesis and a theory.
3. Evaluate and critique scientific information from various sources (journals, magazines, newspapers, television, the internet) for scientific reliability and validity.
4. Engage in logical methodology and communicate via mathematical and graphical models.
5. Describe the phylogenetic relationships among organisms and arrange them on a phylogenetic tree.
6. Describe natural selection and speciation and be able to describe the evolution of a novel trait/species.
7. Relate the structure of phylogenetic trees to the history of biological evolution.
8. Describe the ecosystematic roles of organisms, populations and communities.
9. Diagram the flow of energy and matter through ecosystems.
10. Evaluate selective advantages of various organismal interactions.
11. Relate patterns of population growth to ecosystem dynamics.
12. Define sustainable resource use and describe the role of humans in ecosystems.
13. Make accurate measurements and be proficient at using biological tools such as microscopes, pipettes, etc.
14. Relate the scientific evidence of global climate change to its current impact on Earth.
15. Describe the values of the natural world held by peoples of western civilization and among American Indians.
16. Describe native people's relationship with their natural world and how they interact with flora and fauna.

BI 103H - General Biology-Mushrooms

4 Credit(s)

Through field, classroom, and laboratory work students identify and develop an understanding of mushroom evolution, structure, function and place in the ecology of the areas we study. Required Saturday or Sunday trips to the Cascades and Central Oregon Coast.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Describe the diversity of fungal life and differentiate between fungi and other organisms.
2. Describe natural selection and explain evolutionary processes and selection pressures that lead to fungal diversity.
3. Correctly identify 30-50 useful, edible, and poisonous mushrooms and describe how these are related to ecosystem structure and human activities.
4. Describe the phylogenetic relationships among fungi and arrange them on a phylogenetic tree.
5. Diagram the basic fungal classification system and apply correct use of scientific nomenclature.
6. Apply scientific inquiry to biological sciences.
7. Evaluate and critique scientific information from various sources (journals, magazines, newspapers, television, the internet) for scientific reliability and validity.
8. Apply current sampling methodology protocol to understand and describe how and why fruiting body production varies through seasons.
9. Examine a habitat and describe the ecological processes and predict interactions between fungi and the other organisms in that environment.
10. Diagram the flow of energy and matter through ecosystems and describe how fungi participate in the processes.
11. Evaluate selective advantages of various organismal interactions.
12. Relate patterns of population growth to ecosystem dynamics.
13. Describe and illustrate fruiting body characteristics of an unknown species to apply the use of a dichotomous key for identification.

BI 103J - General Biology: Forest Ecology

4 Credit(s)

Students learn ecological and evolutionary processes and interrelationships in our local forest ecosystems. Students practice identification of major trees, shrubs and wildlife through extensive field work. Explores importance of forests to humans. Required field trips.

Learning Outcomes

Upon completion of this course, students will be able to:

1. Accurately describe, illustrate and explain the evolution of land plants
2. Analyze & explain the functioning of selected plant systems including the reproductive, vascular, defense, nutrients, and immune, and evaluate their impact on human physiology
3. Explain the scientific approach or method, and use it to conduct bioassays of plants and evaluate their potential as antimicrobial chemicals and the impact on the human immune system
4. Describe some of the original peoples of the Pacific Northwest and/or the world, and how they used some plants for food, fiber, shelter, medicine and ceremony
5. Recognize, explain and apply the principle of homeostasis and the use of feedback loops to control physiological systems in plants
6. Analyze the world views and traditional ecological knowledge of Native peoples of the world regarding plants, and compare and contrast that to the scientific approach
7. Identify local edible, medicinal, and culturally significant plants through the study of plant reproductive, defense, and signaling systems
8. Discuss power and privilege in the plant food industry and research and evaluate how to make more healthy and sustainable plant based food choices, with emphasis on the human digestive system
9. Collect local plants and cooperatively design an ethnobotany display emphasizing the medicinal uses of plants and their impacts on human systems such as the nervous, reproductive and digestive systems, for a local wildflower festival at Mt. Pisgah Arboretum

BI 103L - General Biology: Evolution and Diversity

4 Credit(s)

Students learn evolutionary theory, speciation, molecular inheritance, adaptive radiation, Earth history, and origin of life. Explores diversity of life forms and advances in medical and agricultural sciences. Activities: lecture, lab, discussion, and group projects.

Learning Outcomes

Upon completion of this course, students will be able to:

1. Communicate more effectively about science
2. Have an increased ability to make informed decisions about biological issues
3. Have an increased awareness & appreciation of all life on Earth
4. Demonstrate the ability to conduct and to understand scientific inquiry

5. Explain the evolutionary processes that shape the unity and diversity of organisms on Earth and contribute to characteristics and adaptations
6. Understand the principles underlying the classification of organisms and be able to describe the distinguishing features of the major categories of organisms
7. Understand hierarchical levels of biological organization (molecular to biosphere)
8. Understanding of the critical interactive role among organisms (including humans) and be able to use of this information in decision-making

BI 103M - General Biology: Biodiversity and Sustainability

4 Credit(s)

Survey course providing an overview of animal and plant diversity, evolution, and ecology. Activities: field trips, lab lecture, discussion, and group projects. Includes current issues such as human impacts on the natural world.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply scientific inquiry to biological sciences. Understand government use and misuse of science.
2. Describe the steps involved in scientific inquiry and distinguish between a hypothesis and a theory.
3. Evaluate and critique scientific information from various sources (government, environmentalist, industry) for scientific reliability and validity.
4. Engage in logical methodology and communicate via mathematical and graphical models.
5. Describe the phylogenetic relationships among organisms and arrange them on a phylogenetic tree.
6. Describe natural selection and speciation and be able to describe the evolution of a novel trait/species.
7. Compare and contrast historical evolutionary changes and modern anthropogenic changes.
8. Relate the structure of phylogenetic trees to the history of biological evolution.
9. Describe the ecosystematic roles of organisms, populations and communities.
10. Diagram the flow of energy and matter through ecosystems and explain how this relates to the sustainability of the ecosystem.
11. Evaluate selective advantages of various organismal interactions.
12. Relate patterns of population growth (both wild and human) to ecosystem dynamics.
13. Define sustainable resource use and describe the role of humans in ecosystems.
14. Describe human reliance on the natural world, anthropogenic threats to natural systems.
15. Relate poverty, education, equitability and tolerance to sustainability.
16. Explain the damage done by invasive exotics, deforestation, pollution and desertification.
17. Make accurate measurements and be proficient at using biological tools such as microscopes, pipettes, etc.

BI 112 - Cell Biology for Health Occupations

4 Credit(s)

Introduction to human cell structure, function, respiration and division. Includes genetic concepts of DNA replication, protein synthesis, genes and inheritance. Laboratory skills: use of microscopes, identification of cell structures. Lab included.

Corequisite: CH 112

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Properly and effectively use a microscope to observe and measure prepared slides, cells, and living organisms
2. Describe and model the processes of cell growth and division including how the process is regulated and the consequences of the loss of regulation
3. Relate the structure of DNA to its replication, role in protein production, and importance in human genetics and diseases
4. Predict human inheritance patterns based on cellular genetics
5. Explain how animal cells acquire and use energy and how this process is regulated
6. Outline the structures of a cell and describe the function of each

7. Summarize how cells respond to and communicate with the external environment
8. Evaluate the role of emerging genetic technologies on human health care

BI 211 - Principles of Biology

4 Credit(s)

College-level writing strongly encouraged. Designed for Life Science major transfer students. Topics: cell structures and evolution, membranes, biochemical pathways, bioinformatics, and molecular genetics. Skills: microscopy, modeling, scientific paper analysis, experimental design.

Prerequisite: MTH 095 with grade of C- or better, or placement into MTH 111 or higher.

Learning Outcomes

Upon completion of this course, students will be able to:

1. Use the definition of evolution and natural selection in a new situation to describe how a current population evolved from an ancestor with different traits.
2. Model the structure of a cell. Describe the pathway of molecules synthesized throughout the cell. Apply knowledge to a new disease arising from incorrect structure and/or function.
3. Collect, graph and analyze data demonstrating the process of osmosis and effects of solution concentration on a biological system. Support lab analysis with fluid mosaic model concept of cell membranes.
4. Conduct an experiment using enzymes. Identify enzyme properties manipulated in the lab.
5. Compare and contrast the scientists responsible for the discovery of the structure of DNA. Build and describe a segment of DNA. Describe DNA replication.
6. Model the steps of protein synthesis. Compare and contrast effects of point mutations to frameshift mutations. Search protein databases, choose and predict variety of organismal protein sequences to align, analyze resulting sequence alignment and evolutionary tree.
7. Model the movement of chromosomes through the processes of mitosis and meiosis. Identify order and describe the structures visible in micrographs.
8. Collect data and/or analyze data for genetic patterns of inheritance.
9. Compare and contrast metabolic pathways of aerobic and anaerobic cellular respiration, and photosynthesis. Connect pathway function with cellular structure.
10. Apply knowledge of cell structure and evolution to support the theory of endosymbiosis.
11. Analyze and draw conclusions from data in table or graph form.
12. Collect, manage, and share data within a single lab.
13. Analyze a primary or secondary scientific article for the new and old hypotheses and support.

BI 212 - Principles of Biology

4 Credit(s)

College-level writing strongly encouraged. Designed for Life Science major transfer students. Topics: comparative anatomy and physiology, multicellular evolution, and diversity of Plants and Animals. Skills: experimental design, data management, descriptive statistics and cladogram construction. Lab included.

Prerequisite: BI 211 with grade of C- or better or BI 101F or BI 112 with grade of A- or better or instructor consent.

Learning Outcomes

Upon completion of this course, students will be able to:

1. Draw and explain a model of homeostasis and feedback loops in biological systems. Apply these general concepts to a new situation.
2. Construct a cladogram from an organism/trait matrix illustrating the evolution of life from single-celled protists to multicelled plants and animals.
3. Compare the two cladograms and synthesize evolutionary trends within autotrophs and heterotrophs.
4. Analyze and draw conclusions from data in table or graph form.
5. Locate, evaluate, and utilize appropriate scientific research when predicting outcomes of experiments.
6. Collect, manage, and share data across multiple sections for a multi-week experiment.
7. Analyze data from large data sets to support individual hypotheses. Critique limits of data.
8. Differentiate the goals of both basic and applied research and give examples of each to demonstrate the similarities and differences between them.

BI 213B - Principles of Botany

4 Credit(s)

Designed for Life Science majors. Topics: evolutionary trends of flowering plants, diagnostic characteristics of plant families, species distribution and community ecology interactions. Skills: explain phylogenetic relationship between plant groups, describe plant associations and species interaction in a variety of ecosystems, proficient use of botanical keys; ecological research that includes data documentation and analysis.

Prerequisite: BI 211 and BI 212 with a grade of C- or better or instructor consent

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Draw and describe characteristics that define the Anthophyte clade from all other plant clades
2. Construct a phylogenetic tree showing major flowering plant clades with key characters that distinguish the each clade
3. Discuss the trends in flowering plant evolution
4. Explain the ecological mechanisms and selective pressures that underlay those trends
5. Use climate and topographic maps to identify the floristic regions in Oregon
6. Complete a descriptive report of plant community structure including plant associations, biodiversity assessment and the biological interactions that take place in a biological community
7. Describe a plant in detail using descriptive botanical terminology
8. Identify an unknown plant using a botanical key
9. Identify on-sight at least 150 native and naturalized plants of Lance Co. Oregon by binomial and family, spelled correctly
10. Identify on-sight and use of morphological characteristics approximately 40 flowering plant families by scientific name, spelled correctly
11. Conduct plant ecology research from experimental design through data collection and analysis and final reporting

BI 213Z - Principles of Zoology

4 Credit(s)

Survey of comparative vertebrate anatomy, vertebrate evolution, cladistics, and ecology. Skills: dissection, digital documentation, cladogram construction, and mathematical models in biology. Designed for Life Science Majors. College-level writing and math skills strongly encouraged.

Prerequisite: BI 211 and BI 212 with a grade of C- or better or instructor consent.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Use the concept of evolution to describe current populations with potential natural selection pressures
2. Define the term species using at least two different definitions. Compare and contrast these definitions for a given real-world situation
3. Compare and contrast dissections for internal anatomy similarities and differences across vertebrate examples. Propose evolutionary pressures that caused differences to arise
4. Construct a cladogram for the evolution of vertebrates, filling in the key character changes. Hypothesize alternative cladograms and critically analyze these alternatives
5. Design and complete a population survey. Identify weaknesses in design and describe limits to sampling. Describe population data using mean and standard deviation statistics
6. Build a mathematical model of population growth curves. Analyze the mathematical differences between exponential and logistical growth curves
7. Use the Hardy-Weinberg Theorem to predict and analyze population genetics between generations. Describe the limits to the theorem and how the theorem is useful despite these strict limits
8. Compare and contrast climate change and ozone depletion. Predict effects of both on populations. Use primary literature to argue for effects
9. Analyze and draw conclusions from primary literature
10. Analyze and draw conclusions from data in table or graph form
11. Locate, evaluate, and utilize appropriate scientific research when predicting outcomes of experiments
12. Collect, manage, and share data across multiple sections for a multi-week experiment
13. Analyze data from large data sets to support individual hypotheses. Critique limits of data

BI 231 - Human Anatomy and Physiology 1

4 Credit(s)

Foundational first course in anatomy/physiology. Topics include human body organization, histology and the integumentary, skeletal, articular, and muscular body systems; nervous system fundamentals and autonomic nervous system. Common clinical applications associated with these topics are presented. Lab included.

Prerequisite: BI 112 with a grade of C- or better

Recommended: CH 112 with a grade of C- or better

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Develop a vocabulary of appropriate terminology to effectively communicate information related to anatomy and physiology
2. Recognize the anatomical structures and explain the physiological functions of the integumentary, skeletal, muscular, articular body systems and the autonomic nervous system
3. Recognize and explain the principle of homeostasis and the use of feedback loops to control physiological systems in the human body
4. Utilize anatomical knowledge to predict physiological consequences, and apply knowledge of function to predict the features of anatomical structures
5. Demonstrate laboratory procedures used to examine anatomical structures and evaluate physiological functions of the organ system covered including histology, bone marking identification, gross musculature, neural anatomy and membrane physiology
6. Utilize microscopes to identify specific tissues and structures in histology
7. Interpret anatomical and physiological data and graphs regarding homeostasis, muscle and neural physiology
8. Approach and examine issues related to the integument system, skeletal, muscle and neural physiology and autonomic nervous system from an evidence based perspective
9. Synthesize ideas to make a connection between knowledge of cell biology, chemistry and anatomy and physiology and real-world situations, including healthy lifestyle decisions and homeostatic imbalances

BI 232 - Human Anatomy and Physiology 2

4 Credit(s)

Topics include anatomy and physiology of central and peripheral nervous systems, special senses, hematology, cardiovascular, lymphatic and immune systems. Common clinical applications associated with these topics are presented. Lab included.

Prerequisite: BI 231 with a grade of C- or better

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Develop a vocabulary of appropriate terminology to effectively communicate information related to anatomy and physiology
2. Recognize the anatomical structures and explain the physiological functions of the nervous, cardiovascular, hematological, lymphatic and immune systems
3. Recognize and explain the principle of homeostasis and the use of feedback loops to control physiological systems in the human body
4. Utilize anatomical knowledge to predict physiological consequences, and apply knowledge of function to predict the features of anatomical structures
5. Demonstrate laboratory procedures used to examine anatomical structures and evaluate physiological functions of the organ system covered including nervous, special senses, cardiovascular and hematological systems
6. Utilize microscopes and/or other appropriate technology to identify structures and histology of the organ systems studied in B I232
7. Interpret anatomical and physiological data and graphs regarding hematology, cardiac cycles, EKGs and blood pressure hemodynamics. Conduct and interpret EKG recordings
8. Recognize and explain the interrelationships within and between anatomical and physiological systems of the human body
9. Approach and examine issues related to the nervous, cardiovascular and immune systems from an evidence-based perspective
10. Synthesize ideas to make a connection between knowledge of cell biology, chemistry and anatomy and physiology and real-world situations, including healthy lifestyle decisions and homeostatic imbalances

BI 233 - Human Anatomy and Physiology 3

4 Credit(s)

Topics include respiratory, digestive, urinary, endocrine, and reproductive systems. Also included are concepts of genetics, inheritance patterns and disorders. Common clinical applications associated with the topics above are presented. Lab included.

Prerequisite: BI 232 with a grade of C- or better**Learning Outcomes**

Upon successful completion of this course, the student should be able to:

1. Develop a vocabulary of appropriate terminology to effectively communicate information related to anatomy and physiology
2. Recognize the anatomical structures and explain the physiological functions of the respiratory, digestive, urinary, endocrine and reproductive system as well issues related to fluid- electrolyte and acid-base balance and heredity
3. Recognize, explain and apply the principle of homeostasis and the use of feedback loops to control physiological systems in the human body
4. Utilize anatomical knowledge to predict physiological consequences, and apply knowledge of function to predict the features of anatomical structures
5. Demonstrate laboratory procedures used to examine anatomical structures and evaluate physiological functions of the organ system covered including respiratory, digestive, urinary, endocrine and reproductive system as well issues related to fluid- electrolyte and acid-base balance and heredity
6. Utilize microscopes and/or other appropriate technology to identify structures and histology of the organ systems studied in BI 233
7. Interpret anatomical and physiological data and graphs regarding pulmonary, renal, gastrointestinal and endocrine function as well data related to fluid-electrolyte and acid-base balance. Conduct and interpret pulmonary flow recordings and urinalysis
8. Recognize and explain the interrelationships within and between anatomical and physiological systems of the human body
9. Approach and examine issues related to the respiratory, digestive, urinary, endocrine and reproductive system as well issues related to fluid- electrolyte and acid-balance and heredity from an evidence-based perspective
10. Synthesize ideas to deduce associations between knowledge of cell biology, chemistry and anatomy and physiology and real world situations, including healthy lifestyle decisions, homeostatic imbalances and clinical applications

BI 234 - Introductory Microbiology

4 Credit(s)

A medically oriented survey of pathogens that includes cell biology, host-microbe interactions, body defenses, microbial control, and pathogenesis, prevention and treatment of infectious diseases. Labs emphasize aseptic technique and methods of culturing, staining, isolation and identification. Lab included.

Prerequisite: BI 233 with a grade of C- or better or instructor consent**Learning Outcomes**

Upon successful completion of this course, the student should be able to:

1. Develop a vocabulary of appropriate terminology to effectively communicate information in a way that reflects knowledge and understanding of microbiological concepts and demonstrates the ability to collaborate and adapt information to different audiences and applications
2. Describe the anatomical structure and explain the unique physiological differences between eukaryotic and prokaryotic cells and the process by which bacteria, viruses and selected parasites affect human health
3. Demonstrate laboratory procedures and techniques used to inoculate, incubate, isolate, inspect and identify microorganisms. Evaluate the efficiency of select chemotherapeutic agents
4. Utilize microscopes and/or other appropriate technology to identify the morphological and biochemical properties of parasites studied in BI 234
5. Explain and apply the principles of microbial growth, microbial control, infectious disease prevention and treatment, therapeutic agents, and vaccinations
6. Document and report on experimental protocols, results and conclusions
7. Examine issues related to the field of microbiology from a clinically-oriented, evidence-based perspective
8. Recognize and explain the principle concepts underlying the pathogenesis of infectious disease and innate and acquired immunological response
9. Apply knowledge of microbiology to explain and predict the pathogenesis of representative infectious diseases and likely outcomes
10. Interpret graphs of microbiological data regarding mathematical principles of epidemiology to determine incidence, prevalence, frequency of disease and

recognize mathematical concepts underlying conditions of contact, virulence, and host resistance

11. Synthesize ideas to make a connection between knowledge of cell biology, chemistry, anatomy and physiology and microbiology and apply knowledge of microbiology and real-world situations, including the role of microbes in health and illness, prevention and treatment, homeostatic imbalances and the pathogenesis of infectious disease

BI 235 - Genetics for Health Professions

4 Credit(s)

Genetic information will play a greater role in future health care as nearly every disease has a genetic cause or component. Therefore, a sound knowledge of genetics and genomics is essential for health care providers in evaluating needs of patients and delivering care to patients and families. This course will prepare students in health care fields by reinforcing the basic principles of genetics and disease while exploring new advances and discussing how these advances will affect health care.

Prerequisite: BI 211 or BI 231**Learning Outcomes**

Students who successfully complete this course will be able to:

1. Utilize terminology such as gene, genotype, phenotype, variant, traits, multifactorial disease, SNP, genetic test, genome scan, pharmacogenomics, etc.
2. Describe how DNA determines phenotypes, or traits
3. Interpret family pedigrees and understand how genes and traits are inherited
4. Describe how environment influences genetic outcomes and the role of epigenetics in genetic expression
5. Differentiate between the major categories of genetic disease and describe characteristics risks for each type
6. Explain the clinical methods of genetic screening, diagnosis, testing

Business Administration

BA 101 - Introduction to Business

4 Credit(s)

This course will provide you with an overview of business. We will cover basic concepts in accounting, finance, economics, management and marketing. This course will help you to choose in which field of business you will later specialize.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Describe the importance of the economic system in U.S. business environments
2. Describe the role of social responsibility and ethics in business and identify some business examples
3. Compare forms of business ownership and the role of entrepreneurship
4. Describe the importance of international business and information technology to today's businesses
5. Compare theories and strategies of business management, including human resources management and operations management, and describe types of organizational structure and the role of successful teams in business
6. Compare marketing strategies, including product, price, promotion, and distribution methods
7. Explore opportunities for investment, finance, and international trade within the business environment
8. Work successfully as a member of a team to investigate a business and produce a team report

BA 206 - Management Fundamentals

4 Credit(s)

This course is a survey of management and what makes a successful manager. Content includes planning, decision making, organizing, leadership, motivation, communication, control, and a thorough overview of the field of management. The course covers the opportunities and challenges posed by a multi-cultural work force and the responsibilities of management in handling and motivating employees in the current business environment. Students should gain skills that can be immediately utilized to effectively work with and manage people.

Prerequisite: BA 101**Learning Outcomes**

Upon successful completion of this course, the student will be able to:

1. Distinguish leadership from management
2. Evaluate how structures, cultures, and chains of command achieve the goals of an organization
3. Distinguish missions, visions, strategies, tactics, goals and objectives

- Use techniques to monitor employee performance and take corrective action when employees underperform
- Explain how laws and social responsibility affects an organization's performance
- Assess the strengths and weaknesses of an organization and evaluate how they correspond to its opportunities and threat

BA 211 - Financial Accounting

4 Credit(s)

Students will gain an understanding of basic terms, the accounting model, and the content of financial statements and then focus on understanding and interpreting the information they contain.

Prerequisite: MTH 095 or higher or test, BA 101 and WR 121 or WR 122 or WR 123. Sophomore standing recommended.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

- Describe who uses accounting information and why
- Describe how financial reporting standards evolved
- Describe the kinds of information reported on corporate financial statements and annual reports
- Analyze business transactions and prepare journal entries
- Prepare and interpret an income statement and a balance sheet for a service business
- Describe qualities and principles of accounting information
- Describe why adjustments are necessary to financial statements
- Prepare and interpret an income statement for a merchandising business
- Compute the cost of inventory with the FIFO, LIFO, and average cost methods
- Prepare and interpret a balance sheet for a merchandising business
- Compute the estimated bad debt loss on accounts receivable
- Compute depreciation using the straight-line, units-of-production, and declining-balance methods
- Describe the accounting treatment for contingent liabilities
- Compute the present value of bonds payable
- Prepare and interpret financial statement presentations of stockholder's equity
- Prepare and interpret a statement of cash flows using the indirect methods
- Conduct financial analysis on an annual report

BA 213 - Managerial Accounting

4 Credit(s)

Introduction to tools and techniques for gathering and analyzing accounting information to make management decisions. Topics include cost-volume-profit analysis, manufacturing costs, special decision analysis, budgeting, and cost accounting.

Prerequisite: BA 211

Learning Outcomes

Upon successful completion of this course, the student will be able to:

- Explain the role of management accounting in making planning and control decisions
- Understand and articulate cost behaviors for the purpose of enhancing business decisions
- Recognize the advantages and disadvantages of variable costing and use it to generate income statements, and make typical differential analysis decisions, such as make or buy, process further, and one time special orders
- Estimate profit and break-even quantities using cost-volume-profit analysis, including CVP problems with target profit and target after-tax profit
- Identify different levels of indirect product costs, and use activity-based costing to estimate the cost of products or services
- Develop flexible budgets and identify when flexible budgeting should be used instead of static budgeting, create a master budget for an organization including sales, production, administration, capital investment, and financial budgets, and create pro forma financial statements
- Understand and anticipate human behavior in reaction to management accounting decisions, such as the selection of a cost driver, transfer prices or budgets
- Understand a process costing system, calculate equivalent units, calculate cost per equivalent unit and apply overhead
- Understand a job-order cost system, calculate over- and-under-absorbed overhead, and account for over- and under-absorbed overhead
- Prepare journal entries for the various cost allocation methods

- Evaluate capital budgeting decisions using a variety of methods and understand why the NPV method is preferred
- Identify and create business performance measures that help accomplish an organization's strategic goals

BA 214 - Business Communications

4 Credit(s)

Introduces workplace and professional communications, and emphasizes writing for a range of audiences and stakeholders in the business and organizational setting. The course exposes students to relevant communication practices and genre, such as memos, reports, proposals, and presentations, and fosters effective "rhetorical thinking" about writing conventions, formatting, tone, and formality. Self-presentation and collaborative skills are cultivated through interactive peer work, discussion boards, and peer reviews of draft writing. Students engage in reflective writing to reinforce metacognition and overall learning.

Prerequisite: BT 108 and WR 121

Learning Outcomes

Upon successful completion of this course, the student will be able to:

- Reduce barriers to effective listening and become more active listeners
- Understand communication theory and use in written assignments and oral assignments
- Plan, organize, and write direct letters, indirect letters, and persuasive letters
- Prepare, revise, and refine formatted letters
- Proofread letters for typographical, spelling, grammatical, and mechanical faults, and evaluate placement of message on the page
- Plan, research, and format a formal report on a topic relating to business
- Share formal report content in an oral presentation
- Give well-organized, clear business presentations that inform, recommend, and train
- Develop effective electronic business presentations
- Create correctly formatted business documents
- Use library resources to effectively obtain information needed for business reports and presentations

BA 223 - Marketing

4 Credit(s)

Marketing is misunderstood, even by business leaders. Most people think that marketing is just sales, but marketing is much more than sales. In order to be successful, businesses must create products that consumers want, price them competitively, distribute them to where they are demanded, and promote their value. Marketing involves all of these things, and this course will give you practice making decisions related to all areas of marketing.

Prerequisite: BA 101

Learning Outcomes

Upon successful completion of this course, students will be able to:

- Describe the evolution of marketing in the American economy
- Define "value" and explain marketing's role in creating value for customers
- Understand the marketing process to include
- Cite the effects that society, economics, government, and technology have on marketing
- Explain qualitative and quantitative market research methods
- Compare and contrast consumer and organizational markets
- Describe the consumer decision making process and the major factors influencing consumer buying behavior
- Define the purpose and benefits of segmentation and targeting and describing the major approaches to doing so
- Explain the concept of positioning and assessing various positioning strategies
- Describe the new product development process
- Evaluate product line planning strategies
- Explain the stages of the product life cycle
- Describe the process of developing brand loyalty
- Compare and contrast the marketing of services and the marketing of goods
- Describe the role of distribution and explaining the importance of supply chain management
- List examples of major issues that marketers must consider when managing and developing international distribution channels
- Explain the importance of integrated marketing communications
- Assess the roles of the methods of communication

19. List the different types of advertising and describing which method is best given certain situations
20. Illustrate the relationship between price, value, and quality
21. Differentiate the factors that affect pricing policy
22. Recognize how the major elements of the marketing process apply to actual marketing situations
23. State ways in which ethics can be integrated into the marketing process
24. Understand the importance of relationship marketing
25. Understand how legal issues affect marketing strategies
26. Evaluate key trends in the global environment
27. Understand the best practices in the contemporary marketing process
28. Incorporate enhanced decision-making among promotional tools and determining cost effectiveness
29. Understand the advertising strategies in a contemporary marketing campaign

BA 224 - Human Resource Management

4 Credit(s)

This course is an introduction to Human Resource Management. It examines the policies and practices used by human resource management staff to build and maintain an effective work force. Topics include human resource planning, job analysis, recruitment, selection, performance appraisal, manpower development, compensation, and labor relations.

Prerequisite: BA 101

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Demonstrate understanding of HR planning and analysis by developing a strategic HR plan, monitoring implementation all while working within a budget.
2. Demonstrate understanding of Talent Acquisition by developing a recruitment plan, and evaluating selection and onboarding decisions.
3. Demonstrate understanding of Performance Management. Including comparing evaluations, appraisals, career development, employee development and corrective actions. Students will also discuss challenges in employee relations.
4. Demonstrate understanding of Employment Laws by reporting on laws including: Oregon sick leave laws, collective bargaining, conflict resolution, FMLA, Title VII, ADA, and wage and hour laws. Students will also discuss ways to create a safe work environment.
5. Understand Compensation. Explain methods of compensation, describe common benefits offered and be able to calculate total cost of compensation. Including incentives, performance compensation, benefits, and risk management.
6. Demonstrate understanding of Training and Development through describing and comparing different types of training, estimate required training for hires, identify programs for employee development, and explain the importance of performance appraisals.
7. Demonstrate ability to work successfully in a team. This includes being able to allocate responsibilities fairly, complete assigned tasks on time, communicate problems and plans, and collaborate in person and digitally with other team members.

BA 226 - Business Law

4 Credit(s)

This class provides an overview of US business law, describes how each of the areas covered impact business, and examines various cases that relate to each area. It also covers the US Constitution, its origination, its role in determining law today, how it impacts business and how changes are made. This course will also cover a review of current legal topics that are impacting business today and the differences between Federal laws and some State of Oregon Laws and which ones take precedence.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Understand how the origins of the U.S. Constitution and how it impacts business today
2. Understand how the law and the court system affect their lives
3. Understand employment, labor and wage law
4. Understand the nature and importance of the contractual relationship, elements of a contract, and how those elements apply to business situations

5. Have a working knowledge of the law and social sources which shape and determine the law
6. Have an awareness of the increasingly complex relationship of individuals and business organizations and the need for critical objective analysis of situations

BA 238 - Sales

3 Credit(s)

A beginning class in the basic techniques of selling. Course content includes: prospecting, pre-approach, presentation, demonstration, objections and closing. Selling as a career is thoroughly explored. Some emphasis will be placed on selling in the retail environment. The course is specifically designed to look at the marketing and psychology of relationship selling.

Prerequisite: BA 101

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Utilize concepts borrowed from the behavioral sciences to gain a better understanding of the nature of buyers
2. Define proven techniques for locating qualified customers
3. Create the favorable conditions that are important in approaching customers
4. Apply the major methods for gaining attention of prospective customers
5. Apply the major techniques for handling sales resistance to given sales situations
6. Articulate the importance of active listening as a means for gaining customer interest and uncovering relevant information
7. Recognize the typical types of buying signals
8. Articulate the need for ethical behavior by salespeople
9. Demonstrate the major techniques for closing the sale
10. Identify some of the more common warning signs of deteriorating customer relations

BA 250 - Small Business Management

4 Credit(s)

This course is a survey class exploring the many factors involved in successfully starting and running a small business. The range of subjects include start up concerns, entity selection, funding sources, choosing a location, marketing, advertising, insurance, pricing, legal aspects, compliance requirements, budgeting, and business plans.

Prerequisite: BT 123 and BA 223

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Understand his or her motivations and the reality of owning a small business.
2. Be able to analyze and compare the attractiveness of various locations.
3. Know the advantages and disadvantages of various sources of funding and be able to evaluate the appropriateness of different funding sources.
4. Be able to use the income statement, balance sheet and cash flow statements to improve business decisions and performance.
5. Know the major components of a marketing plan and be able to briefly outline a condensed marketing plan.
6. Evaluate and select from a variety advertising opportunities.
7. Be able to review and determine the appropriate risk management and/or insurance levels.
8. Understand the value of beneficial relationships with wholesalers and know how to promote positive wholesaler relations.
9. Understand the legal implications of being a business owner and understand the value of being mindful of legal implication while working with operational issues.
10. Be familiar with the various compliance requirements from local, state and federal agencies.
11. Be able to select the appropriate type of business entity for various business endeavors based on the needs of a business.
12. Understand the components, development and use of budgets and be able to prepare simple budgets.
13. Understand, outline and evaluate the components of a business plan.
14. Identify and monitor emerging and developing trends in the social economy to identify best practices or emerging opportunities and risks. Current topics might include green business growth, paperless office practice and procedures, sustainability, impacts of globalization, and recent legal, tax or social developments.

BA 254 - General Aviation Management

3 Credit(s)

This course will present a detailed examination of general aviation's role in the national economy, regional economy and local economy. The course will cover the most effective uses and management of general aviation resources. It will stress the role of the fixed base operator, and the importance of the interview in the hiring process.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Effectively apply business management principles in aviation
2. Professionally perform industry-appropriate employment-seeking strategies
3. Compare and contrast aircraft types for a specific mission to choose the aircraft that best suits that mission

BA 278 - Leadership and Team Dynamics

4 Credit(s)

This course focuses on developing the leadership potential of emerging leaders, and it also enhances students' understanding of teams, thereby increasing their effectiveness as team members. Leadership philosophies, ethical issues, articulating visions, and ways to empower others will be explored through readings, activities, and discussions.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Understand the advantages, disadvantages, and circumstantial uses of various leadership styles
2. Lead by creating, articulating, and fostering a shared vision
3. Identify, clarify, and set clear, challenging, obtainable, and measurable goals
4. Understand various ethical tools and the reasoning behind various ethical positions
5. Demonstrate improved decision-making skills by utilizing a process approach
6. Identify and constructively resolve organization, team, and interpersonal conflicts
7. Engage in building effective teams
8. Lead by empowering others
9. Understand the human reactions to change and the skills necessary to lead or act as a change agent
10. Understand and implement the theories of servant leadership

BA 281 - Personal Finance

4 Credit(s)

As a comprehensive introduction to personal finance, the course covers budgets, personal banking, consumer credit, insurance, investing, stocks, bonds, retirement planning, and paying for college, and an introduction to personal income taxes. Analytical tools are applied to optimize personal decision making.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Analyze the process of making personal financial decisions
2. Understand the concept of opportunity cost
3. Create a system for maintaining personal financial documents
4. Create and implement a budget based on personal balance sheet and cash flow statement as starting points
5. Compare the costs and benefits of different savings and checking plans
6. Measure personal credit capacity and articulate steps to avoid and correct credit mistakes
7. Determine the cost of credit by calculating interest with various interest formulas
8. Understand the process of becoming a home owner and the potential tax advantages
9. Define risk management and evaluate methods of managing risk, including insurance
10. Identify the major types of investments available and when they are appropriate
11. Discuss the advantages and disadvantages of various investment strategies including asset allocation and dollar cost averaging
12. Discuss why people invest in common stock and how stocks are bought and sold
13. Discuss why people invest in bonds and how they are bought and sold
14. Explain the role of mutual funds in investing planning
15. Discuss various investment evaluation strategies including, volatility as measured by standard deviation, beta, technical and fundamental analysis

16. Recognize the importance of retirement and college planning and estimate retirement financial needs and resources
17. Be proficient in the use of present and future value formulas for a lump sum and annuities
18. Evaluate competing employee benefit alternative and maximize the utilization of employee benefits
19. Apply PV and FV formulas to retirement planning, bond pricing and college planning scenarios
20. Track, interpret and utilize in decision making, basic economic indicators such as the CPI, consumer confidence, unemployment rates, treasury rates, mortgage rates, Dow and S&P 500
21. Calculate and interpret basic investment ratios such as ROI, range and standard deviation
22. Be familiar with the common features and benefits of employer provided retirement plans and health insurance
23. Be familiar with the purpose and importance of basic estate planning tools, such as wills, advanced directives, and living trusts
24. Be familiar with the impact of estate taxes and various planning tools to minimize the impact of estate taxes

Business Technology

BT 108 - Business Proofreading and Editing

4 Credit(s)

Review of language skills necessary to succeed in a business career. Practice proofreading and editing business documents. As part of a team and as an individual, the learner will analyze and apply software and reference tools to proofread, edit, and format business documents for mailing.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Use computer and manual proofreading and editing tools.
2. Use reference sources to verify information when proofreading.
3. Apply the various methods to proofreading documents.
4. Recognize and apply grammar and English usage rules when proofreading.
5. Recognize and apply formatting rules to documents.
6. Use reference tools, grammar and formatting rules in proofreading to produce mailable documents.
7. Understand and apply language and communication skills used in business settings.
8. Utilize the computer to compose fundamental workplace appropriate paragraphs for business documents and business e-mail.
9. Develop a portfolio of rules and examples to solve workplace communication problems.
10. Train other students on specific communication problems in business.
11. Evaluate research sources and analyze the quality of information.

BT 120 - MS WORD for Business

4 Credit(s)

Students will use and apply MS WORD to create professional business documents focusing on learning features in Word to create, edit, and format documents. Students will also learn how to use advanced features to enhance efficiency (mail merge, fillable forms, macros, shared documents, etc.) Learning how to integrate Google Docs, One Drive, and Word Desktop will also be explored.

Prerequisite: Recommended familiarity with Windows operating system and have some past experience using Word

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Navigate both the Windows desktop environment as well as the Cloud based One Drive and Google Drive environment
2. Create and professionally format and navigate business documents (brochures, newsletters, business letters, memos, reports, business plans)
3. Create business documents using advanced Word features such as merging, macros, tables, fillable forms, linking, templates, and smart art
4. Collaborate with others using cloud based sharing features in both One Drive and Google Docs
5. Manage electronic documents using best practices

BT 123 - MS EXCEL for Business

4 Credit(s)

This course introduces students to the use of Microsoft Excel to analyze questions found in a typical business setting. Students will create accurate, professional-looking spreadsheets and graphs. This course will also explore Google sheets and

their business application.

Prerequisite: CIS 101 or CS 120 or BT 120 and MTH 065 or higher or equivalent math placement test.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Create, modify, and manage common business workbooks and worksheets for organizations of any size
2. Use cell, row and column, and worksheet formatting techniques to create professional-looking spreadsheets
3. Use absolute and relative cell references to create flexible formulas and functions
4. Analyze data through the use of filters, pivot tables, formulas, and functions
5. Create, modify, and position diagrams and charts based on worksheet data
6. Apply and modify cell formats and styles, row and column formats, and worksheet formats
7. Use sophisticated Excel functions to perform sensitivity analysis to solve business problems
8. Manage workbooks by using templates, moving, inserting, deleting content, organize worksheets, setup pages for printing, file management and saving data in appropriate formats

BT 150 - Business Web Pages with WordPress

3 Credit(s)

Introduction to business web concepts and site building. This class incorporates research into best business web practices while learning how to use the latest online platforms for building a business web page. The class will focus on the use of WordPress, Wix, HTML5, and CSS3. The final project involves developing a web site for a local business or not-for-profit agency.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Prepare a business web page plan. Develop consistent design, navigation, and content to appeal to a target audience
2. Complete a business Web page
3. Use XHTML and Cascading Styles to develop a business Web site
4. Know the basics of styles and style sheets

BT 163 - QuickBooks

4 Credit(s)

Introduces students to the use of QuickBooks for small business accounting. Attention is given to the application of the entire accounting cycle from the creation of a company file, to and including, the end-of-period closing for both service providers and merchandisers with an emphasis on planning and analysis.

Prerequisite: BT 123 and BT 165 or BA 211

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Convert files to QuickBooks and develop a chart of accounts, customer and vendor lists, item lists, employee lists, and payroll items
2. Account for cash, reconcile checking accounts, and integrate QuickBooks with Online banking features
3. Design and utilize QuickBooks as a tool to efficiently analyze and record business transactions via business forms, the general journal, registers, and to meet an organizations tax compliance responsibilities
4. Edit, delete, void, and verify transactions through utilizing Business Centers in the software
5. Record purchases, manage inventory, and track back orders
6. Complete the steps of the accounting cycle to both a service and merchandising business to generate and analyze Financial Statements and other reports exported to Microsoft Word and Excel
7. Set up and process payroll, including the generating of payroll reports
8. Estimate job costs, track time, and provide progress invoicing
9. Create budgets and forecasts
10. Set passwords, closing dates, and utilized appropriate reports to create adequate internal control processes in QuickBooks

BT 165 - Introduction to the Accounting Cycle

4 Credit(s)

Introduces fundamental principles of double entry accrual accounting for a sole proprietorship. Students will analyze and record transactions and adjustments, account for payroll transactions, and prepare financial statements for service and merchandising firms.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Explain the relationship between the accounting equation and double-entry bookkeeping
2. Describe how information from the accounting cycle flows into financial statements for a sole proprietorship
3. Analyze and record business transactions, including payroll, accounts receivable and accounts payable, using appropriate accounting journals and ledgers
4. Perform the complete steps of the accounting cycle for service and merchandising businesses
5. Prepare a balance sheet, income statements, and statement of owner's equity for a sole proprietorship
6. Maintain customer and creditor accounts in subsidiary ledgers
7. Prepare a bank reconciliation and use a petty cash system and change fund
8. Complete all steps of the accounting cycle in a manual practice set

BT 170 - Payroll Records and Accounting

4 Credit(s)

Introduces federal and state regulations affecting payroll. Provides practice in all payroll operations, including new employee documentation, preparation of payroll and payroll records, accounting entries, and preparation of federal payroll tax returns that are required of business.

Prerequisite: BT 165

Recommended: BT 123

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Interpret principal laws and regulations governing payroll and benefits
2. Identify and use reference sources to answer questions related to payroll
3. Maintain payroll records necessary for accounting information and for legal compliance
4. Perform calculations related to payroll and benefits
5. Record payroll in journals and registers
6. Prepare state and federal payroll tax reports

BT 181 - Customer Service

4 Credit(s)

Learn basic concepts of high-quality customer service and practice applying these concepts to real life situations. This course focuses on developing an attitude of superior customer service both as a front line employee, as well as a manager of these employees. You will learn how to develop a customer service culture which is critical to success in all organizations.

Learning Outcomes

Upon successful completion of this course, the student will:

1. Define what Customer Service is, and understand the importance of providing outstanding customer service
2. Develop a customer service ethic and the importance of customer satisfaction in an entities success
3. Be able to identify internal and external customers and understand their unique roles as consumers
4. Learn general communication skills, such as the importance of first impressions, body language
5. Learn effective customer service-related telephone skills and etiquette
6. Learn effective customer service-related written communication skills
7. Be able to clarify customer needs, respond appropriately, and deal with difficult customers

BT 221 - Budgeting for Managers

4 Credit(s)

Course topics include: budget creation, parts of a budget, gathering information for budgets, creating a product budget, planning and budgeting a project, presenting the budget, budget tracking, HR budgets, small business budgets, and human behavior in relationship to budgets.

Prerequisite: BT 165 or BA 211. Recommend BT 123 - MS EXCEL for Business.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Understand the role of budgets in planning, implementing and controlling to achieve organizational goals.
2. Understand the trade-offs between budgets as a planning tool versus a controlling tool.
3. Be able to identify cost, revenue and profit centers and understand the potential

uniqueness of budgeting for each.

4. Be able to complete the process of designing and creating a budget.
5. Have a basic understanding of the technology and other tools commonly used in budgeting.
6. Define the key components of a successful budget.
7. Explain the use and application of an operating budget.
8. Define the process and techniques of budgeting, including the types of budgets. (static, flexible, incremental, zero based)
9. Apply cost behaviors (fixed, variable and mixed) to the budgeting process.
10. Be able to prepare a budget based on data and criteria that reflect the relational nature of key variables.
11. Understand the relationships and uses of current financial statements, pro forma statements, budgets, forecasts and financial modeling.
12. Understand budget gaming and the behavioral aspects of budget development and implementation.
13. Be able to monitor budgets and utilize variance analysis to practice management by exception.
14. Understand conceptually some of the mathematics applied to budgeting, forecasting and projecting for organizations.

BT 223 - MS EXCEL for Business-Expert

4 Credit(s)

The course presents advanced features of Excel useful in typical business situations. The focus is on using Excel as a tool to create useful, well-documented business spreadsheets. Student projects deal with intermediate to advanced scheduling, marketing, financing and production problems. This course also introduces strategies for independent learning about Excel.

Prerequisite: BT 123 and MTH 095 or higher, or instructor consent

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Create, modify, share, and manage complex business workbooks and worksheets for organizations of any size
2. Use templates, automated procedures, and the Web to retrieve, analyze, and summarize data
3. Organize and analyze data through the use of scenarios, solver, Lookup and Reference functions, and Database functions
4. Use text functions to parse, convert and manipulate text
5. Use business-modeling tools to perform what-if analysis
6. Build and use financial formulas
7. Know how to learn new Excel tools independently and be able to teach the skill to others
8. Use linking of cells, formulas, functions, worksheets, and workbooks to gather information and complete analysis
9. Successfully complete the Microsoft Office Specialist: Excel 2003 Expert exam should the student choose to take the exam

BT 230 - Sustainable Paperless Practices

4 Credit(s)

This course exposes students to a variety of digital tools (Adobe Acrobat, Teams, Outlook, OneNote, One Drive, Google Drive, among others) that will help them be adept at digital work and production. The course also focuses on digital collaboration. Students will learn how to successfully navigate virtual meetings and teams as well as how to manage digital documents both of their own and those that are shared with others.

Prerequisite: BT 120

Learning Outcomes

Upon successful completion of this course the student should be able to:

1. Identify and practice key features of successful virtual teams
2. Demonstrate knowledge of document and information management principles
3. Demonstrate ability to use Adobe Acrobat pro to create fillable forms with security settings and digital signatures
4. Understand and Apply email and Virtual Meeting Etiquette
5. Create, manage, share, assign tasks, and monitor digital documents using Google Drive and One Note
6. Understand Flowcharts and learn how to create using digital applications
7. Collaborate to create and present information using digital tools
8. Analyze the Microsoft Outlook interface and be able to compare and contrast it with gmail

BT 253 - Digital Marketing

4 Credit(s)

This course will demonstrate how the web enables market research on prospects' needs and wants. It will identify which tools can be used to collect data about customers and illustrate how digital marketing resources bring into focus the profiles and behaviors of market segments. The course will focus on digital marketing tools and how to evaluate their effectiveness.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply situational analysis to marketing planning and implementation.
2. Design marketing plans that include digital communications, customer relationship management, and customer feedback.
3. Map the roles and responsibilities of internal participants in internet marketing efforts.
4. Facilitate online marketing strategies and identify viable tools and resources.
5. Identify, monitor, and analyze demographic and consumer behavior data.
6. Design marketing mixes that include digital media.
7. Optimize marketing communications for various digital platforms including social media platforms.
8. Evaluate and promote sustainable, ethical marketing practices.
9. Continuously improve marketing's contribution by understanding consumer behavior and search engine algorithms.

BT 270 - Project Management

4 Credit(s)

This course is an introduction to project management and the role of the project manager. The course features the phases of the project life cycle including definition, planning, implementation, monitoring, and termination. Students will collaborate in teams to apply the tools, methods, and strategies used to manage successful projects.

Prerequisite: BA 101 - Introduction to Business 4 Credit(s) plus basic computer literacy and software application skills.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Identify and describe the knowledge, skills and abilities of effective project managers
2. Prepare effective project planning documents
3. Define project scope, timelines, budgets and assess potential risks
4. Identify and describe issues regarding resource procurement
5. Identify and describe strategies to manage project quality and customer satisfaction
6. Use effective tools to manage time and schedules
7. Identify and describe issues regarding project team communications and conflict resolution
8. Explain how to monitor and track project progress and correct related problems
9. Describe professional certifications available to project managers
10. Identify and describe ethical issues that may impact projects

BT 272 - Tax concepts and Preparation

4 Credit(s)

Introduces individual and business federal taxation. Students will study tax concepts, planning, rules, procedures, and the implication of taxes on financial decisions. Students will become familiar with the preparation of basic tax forms and schedules.

Prerequisite: BT 206 and BT 165

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Understand and competently articulate key terms and concepts
2. Research and find information pertinent to tax preparation and decision making
3. Properly calculate adjusted gross income, tax liabilities, depreciation amounts, capital gains and effective tax rates
4. Analyze and determine whether to use an itemized or standard deductions
5. Prepare individuals taxes including individual forms, schedule c (sole proprietor) and accompanying schedule for capital gains and depreciation amounts
6. Perform analysis to determine the after-tax consequences of various investment alternatives
7. Prepare simple corporate taxes on form 1120 with associated schedules
8. Identify common strategies for reducing an individuals effective tax rate
9. Discern between strategies of tax avoidance and tax evasion
10. Discuss the tax implications of starting and dissolving a business entity

11. Understand the implication of special allocations of various tax items due to specific partnership agreements
12. Account for a partner's basis in a partnership
13. Be familiar with some of the common business credits
14. Be familiar with a start up companies' tax elections and accounting for start up costs
15. Prepare basic form 1065 and schedules K-1 for partnerships

BT 286 - Professional Bookkeeping

4 Credit(s)

This course continues to develop skills needed to become a full-cycle bookkeeper. Five primary areas of focus are accounting error correction, adjusting entries, payroll, depreciation and working papers.

Prerequisite: BA 211 and BT 170 and BT 165 and BT 123 and BT 163

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Identify and correct a variety of common accounting errors
2. Properly account for various accruals and deferrals
3. Utilize and prepare trial balances, worksheets and financial statements
4. Be conversant in wage and hour laws and issues
5. Prepare and describe adjusting entries on a worksheet or in general journal form
6. Prepare common payroll entries
7. Depreciate assets for tax and financial purposes using a variety of methods
8. Prepare journal entries to record depreciation and disposal of assets
9. Identify and prepare both perpetual and periodic inventory entries
10. Value inventory and cost of goods sold, utilizing LIFO, FIFO and weighted average costing method
11. Be able to identify common small business internal control deficiencies and suggest improvements
12. Demonstrate intermediate level skills in the preparation of cash flow statements
13. Apply objectives A-J in a life-like practice set

BT 291 - Operations Management

4 Credit(s)

This course addresses the design and control of processes of production for both goods and services. The course covers business operations for improvements in efficiencies and effectiveness in terms of meeting customer requirements. It addresses managing the process that converts inputs (raw materials, labor, and energy) into outputs of goods and/or services.

Prerequisite: BA 101, BT 123, and MTH 095

Learning Outcomes

Upon successful completion of this course:

1. Directs and coordinates the activities of businesses or departments
2. Manages a staff by preparing work schedules and assigning specific duties
3. Reviews financial statements, sales and activity reports, and other performance data to measure productivity
4. Establishes and implement departmental policies, goals, objectives, and procedures
5. Determines staffing requirements and overseeing personnel processes
6. Monitors businesses practices to ensure they efficiently and effectively provide needed services
7. Communicates with supervisors, peers, or subordinates
8. Establishes and Maintains Interpersonal Relationships
9. Resolves conflicts and negotiates with others
10. Makes decisions and solves problems

Career Development/Human Relations

CG 140 - Career and Life Planning

1-3 Credit(s)

This course focuses on self-assessment, career exploration, and goal setting. You will gain insight into your interests, strengths, values, and life roles; research majors and career fields; discover how successful people create their paths; and develop a vision and next steps for your future.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Broaden knowledge of selves and career options
2. Learn how skills, interests, values and personal preferences relate to life goals
3. Identify and develop confidence in skills and strengths

4. Utilize a variety of career information resources and strategies to explore options
5. Develop skills for making decisions and setting goals
6. Identify beliefs, influences, and barriers that impact their decisions
7. Develop a career "action plan," outlining goals and next steps
8. Recognize that career planning is a lifelong process

CG 140T - Career and Life Planning: WIT

2 Credit(s)

This course is designed to help students in Women in Transition plan their careers and their lives. Students will develop greater self-awareness of their values, interests, and skills, and explore available careers that fit personal wants and needs.

Corequisite: CG 220

Learning Outcomes

Students who successfully complete this course will be able to:

1. Develop awareness of personal values, interests, and skills, and understand how this relates to career choices
2. Utilize career research skills and tools to identify and explore possible careers
3. Learn about college and community resources that can assist in making good career and life decisions

CG 203 - Human Relations at Work

1-3 Credit(s)

This course presents the interpersonal 'people skills' that are important in the modern workplace. Topics are varied. Focus includes awareness of individual work styles and how to work effectively with people with different styles in a diverse workplace.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Identify their individual work style and personality (i.e., where they like to focus their attention, the way they like to take in information and the way they like to make decisions), and the strengths and weaknesses of that style
2. Describe and utilize appropriate communication skills including non-verbal communication and active listening. Describe barriers to communication and how to overcome them. Recognize, describe, and demonstrate Assertive behavior and describe how it differs from Passive and Aggressive behavior
3. Describe the characteristics of an effective work team, the typical stages of team development, and how to be a capable team member
4. Understand the issues involved in working with people from different cultural backgrounds and how to work effectively in a diverse workplace
5. Describe and demonstrate the rules of principled negotiation and conflict resolution

CG 213 - Improving Parent Child Relations

3 Credit(s)

View real life in-home parent-child interactions with a focus on building credibility as a parent, encouragement, effective communication and stimulating children's healthy development. Typical parent/child problems are illustrated in a variety of family types and children.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Observe parent and child behaviors and use a goal-directed model of interpretation
2. Identify typical and problematic parent-child interactions and principals and skills for improvement
3. Identify issues that interfere with developing positive parent-child relations
4. Identify strengths that facilitate the development of positive relationships
5. Determine constructive relationship goals and methods to move toward them
6. Reduce barriers to communication, problem solving and limit setting
7. Learn specific skills of encouragement and effective communication
8. Learn a system of child guidance that is based on principles of encouragement, reasonable influence, and humane intervention rather than compliance and punishment
9. Test comprehensive knowledge of a child guidance system

CG 220 - Life Transitions: Women in Transition

2 Credit(s)

This course is designed to help students in Women in Transition navigate their current life transitions and explore positive new life directions. Students will develop skills in understanding life transitions, coping with stress and powerful emotions, and utilizing assertive communication and boundary setting in personal and professional relationships.

Corequisite: CG 140T**Learning Outcomes**

Students who successfully complete this course will be able to:

1. Understand the impacts of stress and major life transitions on the body, brain, and sense of self
2. Recognize a variety of relaxation and coping skills for dealing with stress and powerful emotions, and integrate these skills into an individualized self-care plan
3. Apply assertive communication and boundary setting skills to personal, academic, and professional relationships

Chemistry

General Chemistry and Organic Chemistry courses have separated out the lab into its own course. It is highly recommended to take both lecture and lab together.

The courses pairs are as follows:

CH 221 (4cr) + CH 227 (2cr)	CH 241 (4cr) + CH 247 (2cr)
CH 222 (4cr) + CH 228 (2cr)	CH 242 (4cr) + CH 248 (2cr)
CH 223 (4cr) + CH 229 (2cr)	CH 243 (4cr) + CH 249 (2cr)

CH 104 - Introduction to General Chemistry

5 Credit(s)

The first term of the standard General, Organic and Biological Chemistry sequence. Designed for students needing a laboratory based introduction to chemistry. Includes measurement, atomic structure, states of matter, bonding, reactions, stoichiometry, gases, solutions, equilibrium, and acid/base chemistry. Lecture and laboratory.

Prerequisite: MTH 052 or above with grade of C- or better or pass placement test.**Learning Outcomes**

Upon successful completion of this course, the student should be able to:

1. Verbalize, write about, or make/draw models to show knowledge of chemical terms, symbols, and concepts.
2. Use quantitative problem-solving techniques at a beginning level.
3. Demonstrate use of laboratory materials, methods, and safety procedures.
4. Gather and interpret laboratory and other data.
5. Use personal computers, graphing software, and internet resources.
6. Demonstrate and appreciate scientific processes and ideas.
7. Predict chemical composition, shape and properties and use this information to explain natural phenomenon.
8. Measure and apply mathematical relationships to scientific observations.

CH 106 - Introduction to Organic and Biological Chemistry

5 Credit(s)

The second term of the standard General, Organic and Biological Chemistry sequence. This introduction to organic and biological chemistry includes hydrocarbons, alcohols, aldehydes, carboxylic acids, carbohydrates, lipids, proteins and an introduction to metabolic pathways. Lecture and lab. With BI 112, meets the prerequisite for BI 231.

Prerequisite: CH 104 with a grade of C- or better or instructor consent**Learning Outcomes**

Upon successful completion of this course, the student will:

1. Compare and contrast the structure, function and metabolism of carbohydrates, lipids and proteins
2. Predict chemical composition, shape and properties and to use this information to explain natural phenomenon on the nano and macroscopic scale
3. Given a chemical transformation, classify the reaction and describe and quantify the outcomes
4. Apply the Laws of Thermodynamics to describe and calculate changes in energy during transformations of matter
5. In a laboratory setting, collect data, safely use common glassware, and apply lab techniques ubiquitous in organic and biochemistry to form evidence-based conclusions

6. Logically communicate complex chemical phenomenon orally and written explanations
7. Critically analyze and develop arguments supporting or denying nutritional/biochemical studies and media claims

CH 112 - Chemistry for Health Occupations

4 Credit(s)

Introduction to atoms, bonding, acid/base chemistry and chemical reactions relevant to biological systems. Topics include metabolic pathways and function and structure of carbohydrates, lipids, proteins and nucleic acids.

Lecture/Recitation. With BI 112, the prerequisite for Anatomy and Physiology BI 231.

Prerequisite: MTH 052 or above with grade of C- or better or pass placement test**Corequisite:** BI 112**Learning Outcomes**

Upon successful completion of this course, the student should be able to:

1. Define and organize the structural levels of particulate matter, from subatomic particles to macromolecules
2. Describe the consequences and origin of water's polarity and its importance to cellular structure and processes
3. Predict the physical and chemical properties of organic compounds based on structure and functional groups
4. Explain how the structure and chemistry of small precursor molecules contribute to the diversity of biomolecules
5. Analyze, describe and model processes that occur in biochemical reactions, such as redox and acid/base chemistry
6. Outline important metabolic processes that occur in human cells and the associated matter and energy transformations

CH 114 - Introduction to Forensic Chemistry

4 Credit(s)

An introduction to chemistry in a forensic context. Topics may include measurement, density, soil chemistry, chromatography, the chemistry of fire, DNA, and organic and inorganic data collection and analysis. Relationships between scientific disciplines are explored. Lecture and laboratory.

Prerequisite: MTH 020 or above with grade of C- or better or pass placement test**Learning Outcomes**

Upon successful completion of this course, the student should be able to:

1. Understand and apply basic chemical concepts used in forensics such as density, measurement, chromatography, and spectrophotometry to identify a substance or compare a known to an unknown forensic sample
2. Use scientific thought and inquiry to critically analyze data in published forensic case studies, journal or periodical articles or collected in lab related to the CSI effect or other forensic concepts
3. Understand Locard's exchange principle, services of a typical crime lab, collection of evidence techniques, elements, compounds, states of matter, organic and inorganic analysis techniques, blood typing and characterization, DNA structure and analysis
4. Demonstrate chemical and biological lab techniques used in forensics for density, measurement, chromatography, organic analysis, inorganic analysis, serology, DNA and arson evidence such as glass, soil, organic and inorganic substances, fuels, blood and DNA evidence
5. Engage with others and work safely in a lab, use proper lab techniques
6. Use the vocabulary of chemistry to explain, discuss and solve problems about the history of forensic science, systems of measurement, physical properties of evidence, organic analysis, inorganic analysis, serology, DNA, arson and explosives

CH 150 - Preparatory Chemistry

3 Credit(s)

Designed to prepare students with minimal chemistry experience to take CH221. Topics include measurement, significant figures, dimensional analysis, density, nomenclature, atoms, stoichiometry, gases, solutions and heat; includes problem solving methods and calculations. Lecture/Recitation.

Prerequisite: MTH 065 or above with grade of C- or better or pass placement test.**Learning Outcomes**

Upon successful completion of this course, the student should be able to:

1. Use measurements written in scientific notation.
2. Analyze uncertainty in measurements, apply rules of significant figures.

- Solve dimensional analysis (unit conversion) questions, apply problem solving techniques to a variety of real life questions.
- Calculate density or use density as a conversion factor.
- Distinguish between different types of compounds.
- Name chemicals given a formula or write a formula given a name.
- Identify the components of an atom, identify isotopes.
- Identify when the concept of a mole is used correctly or incorrectly and use a mole to solve a variety of chemistry questions.
- Calculate molar mass, % composition, empirical and molecular formulas.
- Write and balance chemical equations, distinguish between different types of reactions.
- Use and apply previous concepts to solve stoichiometry problems.
- Observe the properties of gases, solve gas law questions.
- Determine the concentration of a solution, apply stoichiometry concepts to solutions.
- Be prepared to take and succeed in CH 222.

CH 170 - Introduction to Environmental Chemistry

4 Credit(s)

This course is designed to introduce non-science majors to the chemistry of the environment. Basic chemistry principles will be introduced and applied to the chemistry of the atmosphere, water, and soil. The impacts of production and pollution will be evaluated in terms of human and environmental health from a scientific and social perspective.

Prerequisite: MTH 052 or equivalent with a grade of C- or better.

Learning Outcomes

Upon successful completion of this course, students will be able to:

- Verbalize, write about, and use models to demonstrate knowledge of chemical principles related to fundamental processes in the terrestrial environment.
- Use chemical properties to explain environmental systems and phenomenon.
- Apply scientific analysis to an environmental problem and be able to critique solutions using principles of green chemistry and sustainability.
- Demonstrate appropriate use of materials, methods, and safety procedures in both the laboratory and the field.
- Collect and interpret laboratory, field, and other data related to the chemistry of the environment.
- Consider the disparate effects of pollution from an environmental justice perspective.

CH 201 - Chemistry for Engineering Majors I

4 Credit(s)

First course of a two-term sequence designed for engineering majors not needing the three term general chemistry sequence. Introduces measurement, atoms, stoichiometry, gases, thermochemistry, electronic structure, and bonding. Lecture and laboratory; lab emphasizes green chemistry.

Prerequisite: MTH 111 or above with a grade of C- or better or pass placement test

Learning Outcomes

Upon successful completion of this course, students will be able to:

- Gather, interpret, communicate, and analyze data and error to demonstrate understanding of basic chemical concepts and reactions
- Apply unit analysis problem solving techniques or mathematical formulas, individually and in groups, with provided data or data students collect in lab, to solve unit conversion, stoichiometry, gas law, colligative property questions
- Use and describe real life situations as examples to demonstrate and explain key chemical concepts
- Use the vocabulary of chemistry to explain, discuss and solve problems about systems of measurement, properties of atoms, molecules and ions, atomic structure and periodicity, stoichiometry, bonding, behavior and properties of solutions, gases, liquids and solids
- Understand and explain the evolution of the atom from Dalton to quantum mechanics
- Demonstrate chemical lab techniques

CH 202 - Chemistry for Engineering Majors 2

4 Credit(s)

Second course of a two-term sequence designed for engineering majors not needing the three-term general chemistry sequence. Introduces thermodynamics, kinetics, equilibrium, weak acid-base equilibrium, solubility equilibrium,

electrochemistry. Lecture and laboratory; lab emphasizes green chemistry.

Prerequisite: CH 201 with a grade of C- or better

Learning Outcomes

Upon successful completion of this course, students will be able to:

- Gather, interpret, communicate, and analyze data and error to demonstrate understanding of basic chemical concepts and reactions
- Apply unit analysis problem solving techniques or mathematical formulas, individually and in groups, with provided data or data students collect in lab, to solve thermodynamic, equilibria, kinetics, or electrochemistry problems
- Use and describe real life situations as examples to demonstrate and explain key chemical concepts
- Use the vocabulary of chemistry to explain, discuss and solve problems about thermodynamics, equilibrium, kinetics, and electrochemistry
- Understand and explain the thermodynamics, equilibrium, kinetics, and electrochemistry
- Demonstrate chemical lab techniques

CH 221 - General Chemistry 1

4 Credit(s)

Lecture for the first course of the traditional general chemistry sequence designed for science, engineering and health science majors. Introduces measurement, atoms, stoichiometry, gases, thermochemistry and electronic structure and periodicity. It is recommended to take the accompanying lab, CH 227 (2 credits), at the same time as the lecture.

Prerequisite: MTH 095 with grade of C- or better or place into MTH 111 or higher on math placement test.

Learning Outcomes

Students who successfully complete this course will be able to:

- Interpret, and analyze data and error, and communicate findings to demonstrate understanding of basic chemical concepts and reactions
- Apply unit analysis problem solving techniques or mathematical formulas, individually and in groups, with provided data, to solve unit conversion, stoichiometry, thermochemical, solution, gas law and calorimetry questions
- Use and describe real life situations as examples to demonstrate and explain key chemical concepts such as fuel selection and ammonia synthesis
- Use the vocabulary of chemistry to explain, discuss and solve problems about systems of measurement, properties of atoms, molecules and ions, stoichiometry, solutions, gases, thermochemistry, atomic structure and periodicity
- Understand and explain the evolution of the atom from Dalton to quantum mechanics

CH 222 - General Chemistry 2

4 Credit(s)

Lecture for the second course of the traditional general chemistry sequence designed for science, engineering and health science majors. Introduces bonding, condensed phases, solutions, kinetics and concepts of equilibrium. It is recommended to take the accompanying lab, CH 228 (2 credits), at the same time as the lecture.

Prerequisite: CH 221

Learning Outcomes

Students who successfully complete this course will be able to:

- Interpret, communicate, and analyze data and error to demonstrate understanding of basic chemical concepts and reactions
- Apply unit analysis problem solving techniques or mathematical formulas, individually and in groups, with provided or data students collect in lab, to solve unit conversion, stoichiometry, solution, kinetic and equilibrium questions
- Use the vocabulary of chemistry to explain, discuss and solve problems about molecules and ions, atomic structure and periodicity, bonding, behavior and property of liquids, solids and solutions, kinetics and equilibrium
- Use and describe real life situations as examples to demonstrate and explain key chemical concepts
- Assess the strengths and weaknesses of different theories of bonding including valence bond theory and molecular orbital theory and apply each theory appropriately

CH 223 - General Chemistry 3

4 Credit(s)

Lecture for the third course of the traditional general chemistry sequence designed

for science, engineering and health science majors. Builds on previous topics and includes applications of equilibrium, acid/base chemistry, redox/electrochemistry, thermodynamics, nuclear chemistry and introductory organic chemistry. It is recommended to take the accompanying lab, CH 229 (2 credits), at the same time as the lecture.

Prerequisite: CH 222

Learning Outcomes

Students who successfully complete this course will be able to:

1. Interpret, communicate, and analyze data and error to explore ideas, models and solutions and generate further questions
2. Engage students in problem-solving and investigation, through the application of scientific and mathematical methods and concepts, and by using evidence to create and test models and draw conclusions. The goal should be to develop analytical thinking that includes evaluation, synthesis, and reactive insight
3. Use and describe real life situations as examples to demonstrate and explain key chemical concepts
4. Use the vocabulary of chemistry to explain, discuss and solve problems about equilibrium systems, acid base reactions, redox reactions and nuclear chemistry, stoichiometry, solutions, gases, thermochemistry, atomic structure and periodicity
5. Examine relationships with other subject areas, including the ethical application of science in human society, and the relevance of science to everyday life

CH 227 - General Chemistry Laboratory 1

2 Credit(s)

First laboratory course of the general chemistry lab sequence. Introduces chemical lab safety, common laboratory techniques, and analytical skills. Lab emphasized green chemistry.

Prerequisite/Corequisite: CH 221

Learning Outcomes

Students who successfully complete this course will be able to:

1. Working safely in the lab while following explicit laboratory instruction
2. Demonstrate chemical lab techniques such as pipet use, weighing by difference, glassware selection and use, gravity filtration, vacuum filtration
3. Correctly record data and observations and write lab reports
4. Demonstrate understanding and awareness of green chemistry, analyze greenness of labs
5. Gather, interpret, and analyze data and error, and communicate findings to demonstrate understanding of basic chemical concepts and reactions
6. Apply unit analysis problem solving techniques or mathematical formulas, individually and in groups, with data students collect in lab, to solve density, stoichiometry, solution, calorimetry, and gas law questions

CH 228 - General Chemistry Laboratory 2

2 Credit(s)

Second laboratory course of the general chemistry lab sequence. Introduces chemical lab safety, common laboratory techniques, and analytical skills. Lab emphasized green chemistry.

Prerequisite: CH 227 or CH 221 (if taken prior to winter 2021)

Prerequisite/Corequisite: CH 222

Learning Outcomes

Students who successfully complete this course will be able to:

1. Working safely in the lab while following explicit demonstrate chemical lab techniques such as pipet use, weighing by difference, glassware use, gravity filtration, vacuum filtration, titration
2. Maintain a scientific notebook, write lab reports
3. Use LoggerPro software to gather and interpret data
4. Demonstrate understanding and awareness of green chemistry, analyze greenness of labs
5. Gather, interpret, and analyze data and error, and communicate findings to demonstrate understanding of basic chemical concepts and reactions
6. Apply unit analysis problem solving techniques or mathematical formulas, individually and in groups, with data students collect in lab, to solve molarity, colligative property, enthalpy, and rate law, questions

CH 229 - General Chemistry Laboratory 3

2 Credit(s)

Third laboratory course of the general chemistry lab sequence. Introduces chemical lab safety, common laboratory techniques, and analytical skills. Lab

emphasized green chemistry.

Prerequisite: CH 228 or CH 222 (if taken prior to winter 2021)

Prerequisite/Corequisite: CH 223

Learning Outcomes

Students who successfully complete this course will be able to:

1. Demonstrate chemical lab techniques such as pipet use, dilution, glassware use, titration
2. Work safely in the lab
3. Correctly collect record lab data/observations including maintaining a scientific notebook, and write lab reports
4. Use LoggerPro software and pH meters to gather and interpret data
5. Generate, gather, interpret, and analyze data and error, and communicate findings to demonstrate understanding of basic chemical concepts and reactions
6. Apply unit analysis problem solving techniques or mathematical formulas, individually and in groups, with data students collect in lab, to solve molarity, solubility product, and enthalpy, questions
7. Review, analyze, and summarize a current chemistry article published in C & E News (Chemistry and Engineering) and evaluate the article using the CRAPP rubric

CH 241 - Organic Chemistry

4 Credit(s)

First course of organic chemistry sequence for science and health science majors, with a green chemistry emphasis. Introduces organic functional groups, emphasizing hydrocarbons, with bonding theory, nomenclature, and reaction mechanisms. It is recommended to take the accompanying lab, CH 247 (2 credits), at the same time as the lecture.

Prerequisite: CH 222

Learning Outcomes

Students who successfully complete this course will be able to:

1. Describe the bonding and geometry of organic molecules
2. Apply the principle of resonance to the structures and energies of organic molecules
3. Apply the principles of equilibrium and kinetics to organic reactions
4. Identify and describe the stereochemical aspects of the structures of organic molecules
5. Apply the principles of inductive and steric effects to the reactivities of organic molecules
6. Evaluate the reactants and solvents and be able to predict both the products and the reaction mechanism for S_N2, S_N1, E2 and E1 reactions.
7. For hydrocarbons, halides, and alcohols:
 - a) describe the characteristic structure
 - b) relate molecular structure to physical properties
 - c) correlate molecular structure with names
 - d) describe characteristic reaction mechanisms
 - e) state specific reactions
8. Apply knowledge of specific reactions to synthesis problems
9. Use the Principles of Green Chemistry to evaluate chemical reactions

CH 242 - Organic Chemistry

4 Credit(s)

Organic chemistry lecture for science and health science majors, with a green chemistry emphasis. Topics include alcohols, ethers, aromatics, conjugated systems, aldehydes, and ketones. It is recommended to take the accompanying lab, CH 248 (2 credits), at the same time as the lecture.

Prerequisite: CH 241

Learning Outcomes

Students who successfully complete this course will be able to:

1. Explain the theory of nuclear magnetic resonance (NMR) as it applies to the evaluation of organic compounds and be able to interpret NMR spectra
2. Apply the principles of acid-base chemistry to organic reactions
3. Apply molecular orbital theory to explain the chemical character of molecules containing conjugated and aromatic pi bonding
4. Analyze and appropriately apply major bonding theories and models to molecular structures and to predict/explain reactions
5. For the common classes (such as alcohols, ethers, aldehydes, ketones, aromatics, carboxylic acids and their derivatives) or organic molecules
 - a. Describe their characteristic structures
 - b. Relate molecular structure to physical properties
 - c. Correlate molecular structure with names

- d. Describe characteristic reaction mechanisms
- e. State specific reactions
6. Apply knowledge of reaction mechanisms to predict products
7. Apply knowledge of specific reactions to synthesis problems
8. Use the Principles of Green Chemistry to evaluate chemical reactions

CH 243 - Organic Chemistry

4 Credit(s)

Organic chemistry lecture for science and health science majors, with a green chemistry emphasis. Topics include carbonyl systems, nitrogen containing compounds, conjugated systems, and organic compounds of biochemical significance. It is recommended to take the accompanying lab, CH 249 (2 credits), at the same time as the lecture.

Prerequisite: CH 242

Learning Outcomes

Students who successfully complete this course will be able to:

1. Apply the principles of acid- base chemistry to organic reactions
2. Apply molecular orbital theory to explain the chemical character of molecules containing conjugated and aromatic pi bonding
3. Analyze and appropriately apply major bonding theories and models to molecular structures and to predict/explain reactions
4. For the common classes (such as aromatics and conjugated pi systems, carbonyl compounds, amines, amides, carbohydrates, lipids, amino acids and proteins) or organic molecules
 - a. Describe their characteristic structures
 - b. Relate molecular structure to physical properties
 - c. Correlate molecular structure with names
 - d. Describe characteristic reaction mechanisms
 - e. State specific reactions
5. Apply knowledge of reaction mechanisms to predict products
6. Apply knowledge of specific reactions to synthesis problems
7. Use the Principles of Green Chemistry to evaluate chemical reactions

CH 247 - Organic Chemistry Laboratory 1

2 Credit(s)

First laboratory course of the organic chemistry sequence. Introduces common organic laboratory techniques, synthesis methods, and analytical skills including spectroscopies, with a green chemistry emphasis.

Prerequisite: CH 228 or CH 222 (if taken prior to winter 2021)

Prerequisite/Corequisite: CH 241

Learning Outcomes

Students who successfully complete this course will be able to:

1. Describe, and safely and properly conduct, the techniques of melting point determination, distillations (simple, fractional, and steam), refluxing, recrystallization, extraction, chromatography, and spectroscopies as appropriate
2. Use analytical techniques such as melting point determination and spectroscopic techniques to identify products
3. Use chemical references to gather information about organic compounds
4. Keep a proper laboratory notebook and report experimental results using a formal report
5. Use infrared spectroscopy to analyze laboratory reports

CH 248 - Organic Chemistry Laboratory 2

2 Credit(s)

This is the second laboratory course of the organic chemistry sequence. Focusing on developing synthetic laboratory skills including synthetic methods, problem solving, product yields, and analytical skills including spectroscopies, with a green chemistry emphasis.

Prerequisite: CH 247 or CH 241 (if taken prior to winter 2021)

Prerequisite/Corequisite: CH 242

Learning Outcomes

Students who successfully complete this course will be able to:

1. Describe, and safely and properly conduct, the techniques of melting point determination, distillations (simple, fractional, and steam), refluxing, recrystallization, extraction, chromatographies as appropriate
2. Use chemical references to gather information about organic compounds
3. Apply laboratory techniques to the preparation and/or characterization of a variety of organic compounds
4. Use analytical techniques such as TLC, melting point determination, and IR/NMR spectroscopic techniques to evaluate and identify laboratory products

5. Keep a proper laboratory notebook and report experimental results using a formal report
6. Evaluate experiments both qualitatively and quantitatively for technique, results, and to analyze experimental errors
7. Use nuclear magnetic resonance (NMR) spectroscopy to analyze laboratory products

CH 249 - Organic Chemistry Laboratory 3

2 Credit(s)

This is the third laboratory course of the organic chemistry sequence. Focusing on developing synthetic laboratory skills including synthetic methods, problem solving, product yields, and analytical skills including spectroscopies, with a green chemistry emphasis. Students in this course will develop and pursue a synthesis research project.

Prerequisite: CH 248 or CH 222 (if taken prior to winter 2021)

Prerequisite/Corequisite: CH 243

Learning Outcomes

Students who successfully complete this course will be able to:

1. Describe, and safely and properly conduct, the techniques of melting point determination, distillations (simple, fractional, and steam), refluxing, recrystallization, extraction, chromatographies as appropriate
2. Develop and pursue a synthesis research project
3. Use chemical references to gather information about organic compounds
4. Apply laboratory techniques to the preparation and/or characterization of a variety of organic compounds
5. Use analytical techniques such as TLC, melting point determination, and IR/NMR spectroscopic techniques to evaluate and identify laboratory products
6. Keep a proper laboratory notebook and report experimental results using a formal report
7. Evaluate experiments both qualitatively and quantitatively for technique, results, and to analyze experimental errors

Chinese

CHN 101 - 1st Year Mandarin Chinese

4 Credit(s)

The first course of a three-course sequence in introductory Mandarin Chinese language and culture class, with a well- balanced emphasis on effective communicative skills in both the written and spoken language and an understanding of the practices and products of native Chinese culture. Target proficiency level post-course: Novice Low. For beginners.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Pronounce Chinese phonetic symbols accurately.
2. Exchange basic greetings and communicate in predicable settings with appropriate vocabulary
3. Apply basic cultural understandings and recognize cultural values when interacting with native speakers of Chinese and authentic texts
4. Use the understanding of basic Chinese syntactic system to read and compose simple colloquial Chinese texts in Chinese characters

CHN 102 - 1st Year Mandarin Chinese

4 Credit(s)

The second course of a three-course sequence in introductory Mandarin Chinese language and culture class, with a well- balanced emphasis on effective communicative skills in both the written and spoken language and an understanding of the practices and products of native Chinese culture. Target proficiency level post-course: Novice Mid.

Prerequisite: CHN 101

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Pronounce Chinese phonetic symbols accurately
2. Exchange daily greetings and communicate in semi-predicable settings with appropriate vocabulary depending on age and gender
3. Apply common cultural understandings and recognize cultural values when interacting with native speakers of Chinese
4. Use the understanding of basic Chinese syntactic system to read and compose colloquial Chinese texts in Chinese characters
5. Apply their understanding of Chinese to interact with native Chinese speakers

CHN 103 - 1st Year Mandarin Chinese

4 Credit(s)

The third course of a three-course sequence in introductory Mandarin Chinese language and culture class, with a well-balanced emphasis on effective communicative skills in both the written and spoken language and an understanding of the practices and products of native Chinese culture. Target proficiency level post-course: Novice High.

Prerequisite: CHN 102

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Exchange daily greetings and communicate with gender and age appropriate vocabulary when interact with native Chinese speakers
2. Apply common cultural understandings and recognize cultural values when interacting with native speakers of Chinese
3. Use the understanding of more complex Chinese syntactic system to read and compose simple Chinese texts in Chinese characters to interact with their Chinese friends

Chinuk Wawa

CW 101 - Chinuk Wawa

4 Credit(s)

Chinuk Wawa is the original universal language of the Pacific Northwest, spoken in intertribal settings and multi-lingual homes from Southeast Alaska to Northern California. In collaboration with the language education program of the Confederated Tribes of Grand Ronde, this course teaches Chinuk Wawa through daily listening, speaking, writing, and reading of Chinuk Wawa, as well as discussion of the cultures of people who spoke and still speak the language. Chinuk Wawa 101 is the first course of a three-term sequence in which students achieve beginning oral, literate, and cultural competency in Chinuk Wawa at the first-year college level.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Recognize and produce the sounds of Chinuk Wawa
2. Speak using memorized phrases and everyday expressions, identify familiar objects, hold basic conversations using simple sentences, and give short presentations in Chinuk Wawa
3. Respond appropriately when listening to words, phrases, sentences, and questions
4. With help, read both brief and extended texts in Chinuk Wawa
5. Write Chinuk Wawa words, phrases, sentences, and paragraphs with emerging accuracy in spelling and word order conventions
6. Describe elements of the history and culture of Chinuk Wawa speaking peoples

CW 102 - Chinuk Wawa

4 Credit(s)

Chinuk Wawa is the original universal language of the Pacific Northwest, spoken in intertribal settings and multi-lingual homes from Southeast Alaska to Northern California. In collaboration with the language education program of the Confederated Tribes of Grand Ronde, this course teaches Chinuk Wawa through daily listening, speaking, writing, and reading of Chinuk Wawa, as well as discussion of the cultures of people who spoke and still speak the language. Chinuk Wawa 102 is the second course of a three-term sequence in which students achieve beginning oral, literate, and cultural competency in Chinuk Wawa at the first-year college level. Enrollment in Chinuk Wawa 102 requires previous completion of CW101 or comparable language knowledge.

Prerequisite: CW 101 or consent of instructor

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Recognize and produce the sounds of Chinuk Wawa
2. Speak using memorized phrases and everyday expressions, identify familiar objects, hold basic conversations using simple sentences, and give short presentations in Chinuk Wawa
3. Respond appropriately when listening to words, phrases, sentences, and questions
4. With help, read both brief and extended texts in Chinuk Wawa
5. Write Chinuk Wawa words, phrases, sentences, and paragraphs with emerging accuracy in spelling and word order conventions
6. Describe elements of the history and culture of Chinuk Wawa speaking peoples

CW 103 - Chinuk Wawa

4 Credit(s)

Chinuk Wawa is the original universal language of the Pacific Northwest, spoken in intertribal settings and multi-lingual homes from Southeast Alaska to Northern California. In collaboration with the language education program of the Confederated Tribes of Grand Ronde, this course teaches Chinuk Wawa through daily listening, speaking, writing, and reading of Chinuk Wawa, as well as discussion of the cultures of people who spoke and still speak the language. Chinuk Wawa 103 is the third course of a three-term sequence in which students achieve beginning oral, literate, and cultural competency in Chinuk Wawa at the first-year college level. Enrollment in Chinuk Wawa 103 requires previous completion of CW102 or comparable language knowledge.

Prerequisite: CW 102 or consent of instructor

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Recognize and produce the sounds of Chinuk Wawa
2. Speak using memorized phrases and everyday expressions, identify familiar objects, hold basic conversations using simple sentences, and give short presentations in Chinuk Wawa
3. Respond appropriately when listening to words, phrases, sentences, and questions
4. With help, read both brief and extended texts in Chinuk Wawa
5. Write Chinuk Wawa words, phrases, sentences, and paragraphs with emerging accuracy in spelling and word order conventions
6. Describe elements of the history and culture of Chinuk Wawa speaking peoples

CW 201 - Chinuk Wawa

4 Credit(s)

Chinuk Wawa is the original universal language of the Pacific Northwest, spoken in intertribal settings and multi-lingual homes from Southeast Alaska to Northern California. In collaboration with the language education program of the Confederated Tribes of Grand Ronde, this course teaches Chinuk Wawa through daily listening, speaking, writing, and reading of Chinuk Wawa, as well as discussion of the cultures of the people who spoke and still speak the language. Chinuk Wawa 201 is the first course of a three-term sequence in which students achieve intermediate oral, literate, and cultural competency in Chinuk Wawa at the second-year college level. Enrollment in Chinuk Wawa 201 requires previous completion of CW103 or comparable language knowledge.

Prerequisite: CW 103 or consent of the instructor

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Recognize and produce the sounds of Chinuk Wawa
2. Speak using memorized phrases and everyday expressions, identify familiar objects, hold basic conversations using simple sentences, and give short presentations in Chinuk Wawa
3. Respond appropriately when listening to words, phrases, sentences, and questions
4. With help, read both brief and extended texts in Chinuk Wawa
5. Write Chinuk Wawa words, phrases, sentences, and paragraphs with emerging accuracy in spelling and word order conventions
6. Describe elements of the history and culture of Chinuk Wawa speaking peoples

CW 202 - Chinuk Wawa

4 Credit(s)

Chinuk Wawa is the original universal language of the Pacific Northwest, spoken in intertribal settings and multi-lingual homes from Southeast Alaska to Northern California. In collaboration with the language education program of the Confederated Tribes of Grand Ronde, this course teaches Chinuk Wawa through daily listening, speaking, writing, and reading of Chinuk Wawa, as well as discussion of the cultures of the people who spoke and still speak the language. Chinuk Wawa 202 is the second course of a three-term sequence in which students achieve intermediate oral, literate, and cultural competency in Chinuk Wawa at the second-year college level. Enrollment in Chinuk Wawa 202 requires previous completion of 201 or comparable language knowledge.

Prerequisite: CW 201 or consent of the instructor

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Recognize and produce the sounds of Chinuk Wawa
2. Speak using memorized phrases and everyday expressions, identify familiar objects, hold basic conversations using simple sentences, and give short

presentations in Chinuk Wawa

3. Respond appropriately when listening to words, phrases, sentences, and questions
4. With help, read both brief and extended texts in Chinuk Wawa
5. Write Chinuk Wawa words, phrases, sentences, and paragraphs with emerging accuracy in spelling and word order conventions
6. Describe elements of the history and culture of Chinuk Wawa speaking peoples

CW 203 - Chinuk Wawa

4 Credit(s)

Chinuk Wawa is the original universal language of the Pacific Northwest, spoken in intertribal settings and multi-lingual homes from Southeast Alaska to Northern California. In collaboration with the language education program of the Confederated Tribes of Grand Ronde, this course teaches Chinuk Wawa through daily listening, speaking, writing, and reading of Chinuk Wawa, as well as discussion of the cultures of the people who spoke and still speak the language. Chinuk Wawa 203 is the third course of a three-term sequence in which students achieve intermediate oral, literate, and cultural competency in Chinuk Wawa at the second-year college level. Enrollment in Chinuk Wawa 203 requires previous completion of CW202 or comparable language knowledge.

Prerequisite: CW 202 or consent of the instructor

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Recognize and produce the sounds of Chinuk Wawa
2. Speak using memorized phrases and everyday expressions, identify familiar objects, hold basic conversations using simple sentences, and give short presentations in Chinuk Wawa
3. Respond appropriately when listening to words, phrases, sentences, and questions
4. With help, read both brief and extended texts in Chinuk Wawa
5. Write Chinuk Wawa words, phrases, sentences, and paragraphs with emerging accuracy in spelling and word order conventions
6. Describe elements of the history and culture of Chinuk Wawa speaking peoples

Cinema Studies

CINE 265 - Film History 1-The Silent Era to Early Sound

4 Credit(s)

This is the first course in a three-part survey of film history (aesthetic, economic, technological, and cultural). This course explores the evolution of film language from the silent era to WWII, and the various cinematic and artistic movements, as well as the economic context that led to the development of the US Studio System and Classical Hollywood Style. Students will be introduced to the basic elements of film language and tasked with using this vocabulary to analyze cinematic texts. The primary goals of the survey are twofold: to help students recognize and identify particular historical approaches to understanding film; to help students develop a sufficient cinematic vocabulary to identify and analyze cinematic style in and across film texts and within and between film movements. Weekly campus screenings are required, and clips of films are used in class for close analysis and are an integral part of the course.

Prerequisite: Suggested placement into WR 115 or higher (college-level reading and writing skills)

Learning Outcomes

Upon course completion students will:

1. Develop and use a cinematic vocabulary to analyze individual film texts
2. Use a cinematic vocabulary to identify and analyze film style across texts and within and between film movements
3. Recognize and explain key figures and events of/in international film history: e.g., the significance of national cinemas and modes of production
4. Situate cinematic texts within their historic, cultural, economic, and technological contexts
5. Describe key approaches to film history: historic, aesthetic, technological, and economic analysis
6. Use an inquiry process to develop questions pertinent to the study and analysis of film history

CINE 266 - Film History 2-The Sound Era through the 1960s

4 Credit(s)

This is the second course in a three-part survey of film history: aesthetic, economic, technological, and cultural. This course explores the maturation and decline of the studio system in postwar U.S., as well as key international film movements that were informed by, but also challenged, the Hollywood model.

Students will be introduced to the basic visual and aural elements of film language and tasked with using this vocabulary to analyze cinematic texts. The primary goals of the survey are twofold: to help students recognize and identify particular historical approaches to understanding film; to enable students to apply a cinematic vocabulary to identify and analyze cinematic style in and across film texts and within and between film movements. Weekly campus screenings are required, and clips of films are used in class for close analysis and are an integral part of the course.

Prerequisite: Suggested placement into WR 115 or above (college-level reading and writing skills)

Learning Outcomes

Upon course completion students will:

1. Develop and use a cinematic vocabulary to analyze individual film text
2. Use a cinematic vocabulary to identify and analyze film style across texts and within and between film movements
3. Recognize and explain key figures and events of/in international film history: e.g., the significance of national cinemas and modes of production
4. Situate cinematic texts within their historic, cultural, economic, and technological contexts
5. Describe key approaches to film history: historic, aesthetic, technological, and economic analysis
6. Use an inquiry process to develop questions pertinent to the study and analysis of film history

CINE 267 - Film History 3-1960s-the present

4 Credit(s)

This is the third course in a three-part survey of film history (aesthetic, economic, technological, and cultural). This course focuses on contemporary world cinema beginning with various counter-cinemas of the 1960s, "new cinemas" of the 1970s, the rise of the entertainment economy in the 1980s, and concludes with a focus on present-day digital cinemas within a global and trans-media market. Students will be introduced to the basic visual and aural elements of film language and tasked with using this vocabulary to analyze cinematic texts. The primary goals of the survey are twofold: to help students recognize and identify particular historical approaches to understanding film; to enable students to apply a cinematic vocabulary to identify and analyze cinematic style in and across film texts and within and between film movements. Weekly campus screenings are required, and clips of films are used in class for close analysis and are an integral part of the course.

Prerequisite: Suggested placement into WR 115 or above (college-level reading and writing skills)

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Develop and use a cinematic vocabulary to analyze individual film texts
2. Use a cinematic vocabulary to identify and analyze film style across texts and within and between film movements
3. Recognize and explain key figures and events of/in international film history, e.g., the significance of national cinemas and modes of production
4. Situate cinematic texts within their historic, cultural, economic, and technological contexts
5. Describe key approaches to film history: aesthetic, cultural, technological, and economic analysis
6. Use an inquiry process to develop questions pertinent to the study and analysis of film history

College Success

CG 100 - College Success

1-3 Credit(s)

This course emphasizes practice and active learning of skills and strategies that help create greater academic, professional and personal success. College Success strategies empower students to make wise choices that lead to improved experiences and outcomes in college and beyond.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Identify the characteristics of successful and unsuccessful students
2. Specify their own individual problem areas
3. Describe successful strategies to remedy problem areas
4. Apply learned strategies to specific current academic and personal situations

5. Evaluate the effectiveness with which to apply strategies
6. Troubleshoot and make adjustments to strategies as necessary
7. Discuss how to integrate this system into other aspects of their lives

CG 100BC - College Success-Back on Course

1 Credit(s)

This course presents a systematic approach to solving the problems that interfere with student success and satisfaction. Using an experiential format, students will apply proven techniques and strategies to academic and personal situations they experience during the term. The resulting acquisition of new self-management skills will enhance school performance.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Identify the characteristics of successful and unsuccessful students
2. Specify their own individual problem areas
3. Describe successful strategies to remedy problem areas
4. Apply learned strategies to specific current academic and personal situations
5. Evaluate the effectiveness with which to apply strategies
6. Troubleshoot and make adjustments to strategies as necessary
7. Discuss how to integrate this system into other aspects of their lives

Communication

COMM 100 - Basic Communication

4 Credit(s)

Basic Communication is a survey course designed to provide students with an overview of communication as a field of study. Its aim is to help develop oral communication competencies needed to function effectively in diverse communication contexts. The course addresses a variety of theoretical topics in communication studies and attempts to build skills in interpersonal, small group, and public speaking.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Demonstrate an understanding of basic communication theory in varied contexts such as interpersonal communication, small group communication, and public speaking
2. Create oral and written messages appropriate to the audience, purpose, and context
3. Identify and describe essential communication skills (e.g. verbal, nonverbal, interpersonal, intercultural, group, and public communication) and the barriers to successful communication
4. Identify, evaluate, and responsibly address ethical issues within and across a variety of communication contexts
5. Understand, respect, and adapt messages to a diversity of human characteristics and attitudes in order to accomplish communication goals within and across a variety of communication contexts

COMM 105 - Listening and Critical Thinking

4 Credit(s)

This course is designed to develop an understanding and appreciation for listening as a vital element in the communication process. We expect students to improve proficiency through practice in a variety of settings and through exercises with diverse speakers and subjects.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Identify how listening as a vital element in the communication process
2. Describe the separate phases or stages of the listening process
3. Evaluate their own listening behaviors
4. Describe strategies useful for improving listening proficiency
5. Demonstrate improved listening proficiency in a variety of communication settings
6. Demonstrate ability to recall messages and follow oral directions
7. Demonstrate ability to listen through accents, emotional content, and noise
8. Demonstrate ability to organize, summarize, and paraphrase messages
9. Demonstrate critical thinking skills for evaluating the importance and logic of messages

COMM 111 - Fundamentals of Public Speaking

4 Credit(s)

This course is designed to help students learn to express their ideas to an audience with confidence and clarity. The aim of this course is to teach students to speak in a public setting by preparing presentations on a number of diverse topics

for use on a variety of occasions. This course provides students with opportunities to learn how to analyze an audience and tailor their messages to that audience. In addition, students will learn to become critical listeners by analyzing and critiquing other students' presentations.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Prepare speeches that include appropriate topics, clear and specific organization, and compelling evidence and support
2. Deliver speeches using ethical, appropriate and effective delivery techniques
3. Identify the characteristics of, and create different types of speeches, for example informative and persuasive
4. Develop and analyze arguments using ethos (credibility), pathos (emotion), and logos (logic)
5. Demonstrate skills in finding credible sources, audience analysis, critical listening, and evaluating speeches

COMM 112 - Persuasive Speech

4 Credit(s)

This course is designed help students understand the persuasive communication process so that they can prepare effective persuasive presentations and evaluate persuasive messages. Students will develop their proficiency through speech preparation and presentation, written analyses, and debate.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Develop public speaking and argumentation skill
2. Recognize the complexity of controversies, analyze issues and organize persuasive messages
3. Analyze audiences and adapt messages to an audience
4. Demonstrate skill in critical listening
5. Use presentation software to prepare and deliver a speech
6. Locate and evaluate online and print information and increase selectivity in research
7. Critique speeches and debates
8. Understand goals and responsibilities in formal argumentations
9. Engage in ethical communication processes that accomplish goals
10. Respond to the needs of diverse audiences and contexts
11. Build and manage relationships

COMM 115 - Introduction to Intercultural Communication

4 Credit(s)

This course examines the exchange of information between people who are culturally unlike. The essence of intercultural communication is the way in which different cultural values, beliefs, rituals, behaviors, artifacts, experiences, and worldviews – the sets of variables which form the differences between cultures – affect the ways in which people process information. This class discusses how people from different cultures come to see things differently, and how those perceptual differences effect their communication. Class experiences will include lectures, group discussions, activities, and intercultural simulations. While course material is theoretical, course assignments and discussions are designed for application to your everyday encounters with individuals from other countries, therefore, student participation is essential to learning the course materials.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Define communication, culture, and intercultural communication
2. Identify the reciprocal effects of intercultural perceptions on personal, organizational, national, and global settings
3. Identify and describe the building blocks of intercultural communication theory
4. Identify and analyze communication characteristics of various cultures
5. Explore how intercultural models drive behavior and pose challenges
6. Examine the experiences of those with diverse cultural backgrounds
7. Develop communication skills that improve competence in intercultural communication
8. Distinguish the complex relationship between culture and conflict
9. Build and manage intercultural relationships
10. Explore intercultural communication in specific contexts (may include healthcare, business, tourism, and/or educational settings)

COMM 130 - Business and Professional Communication

4 Credit(s)

Business and Professional Communication is designed to increase student understanding and implementation of effective communication behaviors and

skills. Throughout the term, students will learn to recognize, understand, and perform communication in settings common to business and the professions. Instruction includes interpersonal communication, small group communication, interviewing, technical communication, proposal presentation, and more. In addition, attention will be given to presentational aids, both traditional and computer generated.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Recognize communication as a transactional process
2. Identify the elements common to all communication events
3. Identify key terms and major theories relevant to specific business and professional contexts
4. Engage in ethical communication processes that accomplish goals
5. Describe the unique nature of interpersonal relationships with the business and professional context

COMM 218 - Interpersonal Communication

4 Credit(s)

This course is designed to increase a student's understanding and use of effective interpersonal communication behaviors in a variety of face-to-face settings. The goal is to better understand oneself, others, and the role of communication in achieving and maintaining satisfying relationships. Knowledge and skill building are used to foster improvement with special attention to verbal and nonverbal communication, self-concept, effective listening, emotions, intimacy, gender/cultural differences, and relationship development.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Through examinations, discussions, exercises, and analysis, students will display knowledge of terms, theories, and key functional areas in the subject of interpersonal communication
2. Through journal entries, exercises, and analysis, students will document transference of their newfound knowledge and skills about interpersonal communication in everyday life
3. Through skill-building sessions/class assignments, students will improve their communication competence
4. Through signature assignments, students will be able to document improved communication competence

COMM 219 - Small Group Communication

4 Credit(s)

The purpose of the course is to provide a setting in which students may increase their knowledge about the function and role of small group communication both in and out of the workplace. Students will consider the unique challenges found only in group communication setting. Students will have the opportunity to participate in a variety of small groups activities as well as an on-going group that presents a solution to a problem.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Use communication skills that facilitate group work
2. Recognize the importance and function of small groups
3. Learn to work cooperatively and effectively in a group
4. Diagnose and correct ineffective group communication behavior
5. Make effective use of technology to communicate with group members
6. Learn effective group presentational skills
7. Engage in ethical communication processes that accomplish goals
8. Respond to the needs of diverse audiences and contexts
9. Build and manage relationships

COMM 220 - Communication, Gender and Culture

4 Credit(s)

This course explores gender as a cultural communication practice that simultaneously reflects and enacts the culture in which it occurs. That is, gender is positioned as something that we do, via communication, rather than what we are. In order to understand and consider critically gender as communication, this course examines the difference between sex and gender, the intersection of gender and culture, and theories of how we become gendered. We will examine the ways in which social and political meanings attached to gender are communicated in various cultural institutions, practices, and contexts; and we will also consider how issues such as identity, representation, race, sexuality, class, and power bear on gender.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Recognize gender-stereotyped communication in a variety of contexts
2. Assess how gender roles are affected by cultural values
3. Describe gender differences in interpersonal relationships
4. Implement options for ethical verbal and nonverbal communication across gender and culture to create/support sustainable relationships

COMM 260 - Introduction to Conflict Management

4 Credit(s)

This course emphasizes understanding conflict as a communication phenomenon and provides a summary and synthesis of social science research and theory on conflict. This course highlights the interactive nature of conflict and demonstrates the value of collaborative models for resolving conflict.

Learning Outcomes

Upon successful completion of this course, students should be able to:

1. Identify why conflict is an inherent and crucial part of the human condition
2. Explain the role of perception in communication and conflict
3. Analyze competitive and cooperative approaches to conflict
4. Distinguish the difference between supportive and defensive climates
5. Apply techniques to resolve conflict

COMM 265 - Environmental Communication

4 Credit(s)

Environmental Communication will prepare students for today's rhetorical challenges as they seek to communicate about environmental issues in ways that will promote sustainability of communities and ecosystems. This course will be useful for anyone who intends to understand the persuasive strategies used by advocates to defend their outlooks about the environment. Students will apply these principles in papers and oral presentations.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Identify the concepts involved in the fundamentals of rhetoric and communication process
2. Show a practical approach to research and organize materials in a manner that supports a set of persuasive arguments
3. Understand the ethical and intellectual responsibilities associated with rhetorical engagement
4. Show an awareness of current land use/environmental issues, understand the manner in which rhetoric is employed by primary rhetors, and predict outcomes
5. Describe and analyze audience needs and behaviors associated with various environmental issues
6. Demonstrate proficiency in oral testimony, group discussion, and debate
7. Critically evaluate the persuasive tactics used by speakers and campaigns which advocate positions on environmental issues
8. Communicate in a manner that promotes community stability through sustainable use of natural resources based on ecological principles
9. Identify rhetorical elements of public messages and analyze key arguments
10. Understand the influence of digital communication on message construction and society

COMM 285 - Mediated Communication

4 Credit(s)

The use of computers and other technologies in our daily lives has evolved from simple computer calculations to allowing us a personal space in which to share our innermost thoughts and feelings on a large network with others. This course explores the impact of technology on human communication in a variety of contexts including information goals, relational goals, persuasive goals, and entertainment goals.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Explain the components of communication, mediated communication, and interpersonal communication
2. Describe the concept of media as tools
3. Understand and demonstrate information literacy in the digital age
4. Understand and explain media as educational tool
5. Examine interpersonal relationships in a digital age
6. Understand and explain the use of persuasion as it is related to mediated communication

7. Describe the ways in which advertising, campaigning, and entertainment are related to mediated communication
8. Understand and examine the uses and effects of digital entertainment
9. Create and engage in mediated communication through the use of personal blogs

COMM 296 - Communication in Healthcare Settings

4 Credit(s)

This course explores the ways communication shapes health and health practices. The course examines interpersonal communication about health within the contexts of clinician-patient, family, and social support. Mass communication and health will also be covered, including health communication campaigns, public relations, and advertising for health organizations and how the media and technology present and affect health information.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Articulate a clear understanding of health communication theories
2. Apply theoretical knowledge to analyze situations
3. Understand the pervasiveness of culture in health communication
4. Describe the communication of patients, health caregivers, and family caregivers and how the perspectives inform, differ from, and intersect with one another
5. Define the role of communication in maintaining health and coping with illness and death
6. Understand the roles of interpersonal communication, mass communication, and new/social media in health communication

Computer Information Systems

CIS 100 - Computing Careers Exploration

1 Credit(s)

This course provides an orientation for students who are considering programs of study and careers in computer information technology. Students will learn about the degree and certification programs available, the knowledge and skills needed for entry-level positions, the computer industry job market, current trends, professional development, and ethical issues that confront computer information professionals.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Describe the roles of information technology professionals in organizations and the associated skills and knowledge required for those positions
2. Identify professional development resources available to information technology professionals
3. Use critical thinking skills to identify and discuss ethical issues confronted by information technology professionals as well as ethical issues created by the introduction of information technology. Issues concerning security, privacy, and confidentiality will be highlighted

CIS 101 - Computer Fundamentals

4 Credit(s)

A hands-on introduction to personal computers and application software. Students will learn basic computer terminology, the role of computers in society, and the use of word processing, spreadsheet, presentation, database, and Internet software. May also be offered through Distance Learning.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Understand and be able to converse in basic computer terminology.
2. Formulate opinions about the impact of computers on society.
3. Create, format, and save word processing documents.
4. Create, format and save simple spreadsheets.
5. Create an overhead presentation.
6. Create and enter records into a simple database.
7. Use select queries to retrieve information from a database.
8. Access and evaluate Internet-based information.
9. Use e-mail to communicate with others.
10. Be able to organize disks and files.
11. Integrate software applications into their life and school work.

CIS 125A - Software Tools: App Development

4 Credit(s)

This course provides students with no programming background with an introduction to application development. Students will use a visual drag and drop tool to build web based applications and will be introduced to fundamental programming concepts and skills in the process.

Prerequisite: Basic computer literacy.

Learning Outcomes

Upon successful completion of this course the student should be able to:

1. Discuss mobile application development concepts, themes and issues orally and in writing.
2. Use AppInventor to implement, debug and test: event driven applications, mobile games, SMS and location aware applications, quizzes and informational applications, and applications using user input and persistence.
3. Describe programming concepts, themes and issues orally and in writing.

CIS 125D - Software Tools 1: Databases

4 Credit(s)

Fundamental relational database concepts, vocabulary, functionality and skills are covered. Students will apply those skills in a series of hands-on case problems where they design, implement, test, debug and document relational database solutions to case problems.

Prerequisite: Basic computer literacy.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Describe in his/her own words the meaning and usage of relational database concepts and vocabulary
2. Use a representative relational database package to implement database tables, queries, forms and reports
3. Evaluate the appropriateness of the use of a relational database in the solution of a case problem
4. Design relational database tables, queries, forms and reports that could be used in the solution of a case problem
5. Test queries, forms and reports to determine the reasonableness of the results produced in a variety of circumstances
6. Debug a query, form and/or report that produces error messages and/or incorrect results
7. Automate typical database tasks

CIS 125G - Software Tools 1: Game Development

4 Credit(s)

This course is an introduction to the field of game development. It includes a survey of computer game categories and platforms, an overview of the game design and development process, and an introduction to tools used for graphics development and game development. Students in this course will create several elementary computer games.

Prerequisite: Basic computer literacy.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Differentiate between different genres of games.
2. Compare and contrast games meant for education and entertainment.
3. Design computer based games.
4. Create computer based games.
5. Apply programming principles to game implementation.

CIS 135G - Software Tools 2: Game Development

4 Credit(s)

This course builds upon the material covered in CIS 125G. Topics covered include physics simulation, user controls, graphical methods, animation issues, and script writing for game building tools. Students will work with an industry standard game development engine and will design and create several games.

Prerequisite: CIS 125G and (CS 162C or CS 162N or FA 222) or instructor's permission

Learning Outcomes

Students who successfully complete this course will be able to:

1. Program in a scripting language for game development
2. Work with an elementary physics engine
3. Work in a teamwork environment creating several computer games
4. Use basic computer AI techniques in creating a game
5. Develop an effective user interface

CIS 140U - Introduction to Unix/Linux

4 Credit(s)

Introduces the Unix/Linux operating system. Topics: Fundamental Unix/Linux command set, editors, shell scripts, file system security, and installation of the operating system. Provides experience using the graphical user interface as well as the command line to perform end-user operations and basic system administration.

Prerequisite: Basic Computer Literacy

Learning Outcomes

Students who successfully complete this course will be able to:

1. Understand basic operating system features
2. Be able to install the operating system
3. Be able to do basic system configuration
4. Be able to run applications, and do file management
5. Be able to use the graphical and command line user interfaces
6. Be able to use editors and run scripts
7. Understand file system security

CIS 140W - Introduction to Operating Systems: Windows Clients

4 Credit(s)

Introduction to operating system and components using Windows. This course provides theory and hands-on experience using and configuring Windows. Covered topics include: user interfaces, accounts, processes and scheduling memory, file systems and file permissions, multimedia codecs, networking, and basic security.

Prerequisite: Digital Literacy.

Learning Outcomes

Upon successful completion of this course the student should be able to:

1. Use Windows to do file management and execute applications.
2. Customize and configure Windows.
3. Utilize antivirus and file compression software.
4. Use DOS commands to do file management and understand DOS batch files.
5. Install and update Windows utilities and applications.
6. Manage shared folders and permissions.
7. Create and manage user accounts and groups.

CIS 195 - Web Authoring 1

4 Credit(s)

This course provides students with little computer experience the concepts and skills necessary to create static web pages using the current versions of Hyper Text Markup Language (HTML) and Cascading Style Sheets (CSS). Through hands-on practice students will master the concepts, tools and skills needed to construct web pages and publish pages to the internet.

Prerequisite: Basic computer literacy and file management.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Discuss the technologies and tools used in the creation of static web pages
2. Prepare web page plans and preliminary designs for content and layout based on an analysis of web site purpose, audience, and client needs
3. Implement, test, validate and debug html syntax for semantic meaning of web pages
4. Implement, test, validate and debug css syntax for styling and layout of web pages

CIS 275E - Data Exploration and Visualization

4 Credit(s)

Using tools and techniques of beginning data analysis, students will learn how to get raw data from various sources and manipulate it into a format that can be used to answer questions about business problems. From that raw data, students will learn how to visualize the relationships between data elements through charts and graphs, draw conclusions from the charts presented, and communicate their findings in a professional manner.

Prerequisite: CS 275 and MTH 095

Learning Outcomes

Students who successfully complete this course will be able to:

1. Explain the analytical process and the roles of data analyst and data scientist
2. Understand the concept of preparing a set of questions that will allow accurate data analysis and help discover relevant business insights
3. Effectively use advanced SQL aggregate functions (statistical aggregations and windowed aggregations) to perform initial exploratory data analysis on raw data

4. Effectively use tools such as Excel or Oracle to pull data from various sources to create a single reporting source
5. Effectively use graphical tools such as Excel or Tableau to represent data and show relationships between data elements
6. Create a professional proposal on a business problem, and charts and graphs showing the result, their analysis of the problem, and their resulting solution

CIS 287 - Microcomputer Hardware

4 Credit(s)

The course introduces students to the fundamentals of computer hardware and software. Topics covered are the fundamentals of mobile devices, Linux, macOS, virtualization, and cloud computing as well as expanded information about Microsoft Windows operating systems, security, networking, troubleshooting, and the responsibilities of an IT professional.

Learning Outcomes

Upon completion of this course, the successful student will be able to:

1. Install and configure components to build, repair, or upgrade personal computers
2. Perform troubleshooting on personal computers
3. Explain how computers communicate on a network
4. Configure devices to communicate on a network
5. Explain how to troubleshoot laptops and other mobile devices
6. Install a printer to meet requirements
7. Describe virtualization and cloud computing
8. Install Windows operating systems
9. Perform management and maintenance of Windows operating systems
10. Explain how to configure, secure, and troubleshoot mobile, MacOS, and Linux operating systems
11. Implement basic host, data, and network security
12. Explain the roles and responsibilities of the IT Professional

Computer Science

Students who complete more than one CS 161 or CS 162 programming language course should be aware that transfer institutions may count multiple 161 or 162 courses as repeats, **and may not accept them in transfer**. Students wishing to complete multiple programming courses should first take a CS 161/162 series and then enroll in CS 133/233 course series for any subsequent programming languages.

CS 120 - Concepts of Computing: Information Processing

4 Credit(s)

This course provides a wide range of topics in the Computer Information Technology field: including the basics of computer hardware and software, operating systems, word processing, spreadsheets, database management, network and internet communications, security, and the impact of information technology on individuals and society.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Demonstrate an understanding of computer hardware by being able to
 - Identify types of computer hardware, how they process information and how individual computers interact with other computing systems and devices; Identify the function of computer hardware components; Identify the factors that go into an individual or organizational decision on purchasing computer equipment; Identify how to maintain computer equipment and solve common problems relating to computer hardware
2. Demonstrate an understanding of computer software by being able to
 - Identify how software and hardware work together to perform computing tasks and how software is developed and upgraded; Identify different types of software, general concepts relating to software categories, and the tasks to which each type of software is most suited or not suited; Identify fundamental concepts relating to database applications
3. Demonstrate the ability to use an operating system by being able to
 - Identify what an operating system is, how it works, and solve common problems related to operating systems; Manipulate and manage the Windows desktop files and disks; Identify how to change system settings install and remove software
4. Demonstrate an understanding of software application functions by being able to
 - Start and exit a Windows application and utilize sources of online help; Identify common onscreen elements of Windows applications change application settings and manage files within an application; Perform common editing, formatting and printing functions

5. Demonstrate an understanding of word processing functions by being able to - Format text and documents including the ability to use automatic formatting tools; Insert, edit and format tables in a document
6. Demonstrate an understanding of spreadsheet functions by being able to - Modify worksheet data, structure and formatting; Sort data; Manipulate data using formulas and functions; Add and modify charts in a worksheet
7. Demonstrate an understanding of database software by being able to create and manipulate database tables, data-entry screens, reports, and queries
8. Demonstrate an understanding of presentation software by being able to create and format simple presentations
9. Demonstrate an understanding of Networks by being able to - Identify network fundamentals and the benefits and risks in network computing; Identify the relationship between computer networks, other communications networks (like the telephone network) and the internet

CS 133C - Beginning Programming: C++

4 Credit(s)

This is the first in a sequence of 2 courses that teaches students the Computer Science concepts and skills underlying programming. The course introduces students to fundamental programming concepts as well as the syntax of the C++ programming language and the CLion development environment.

Prerequisite/Corequisite: CS 162N or CS 162P

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Describe introductory programming concepts orally and in writing
2. Develop, test and debug algorithms involving the three structured programming constructs
3. Design, implement, test and debug a C++ program using: variables and expressions, selection, repetition, methods and strings
4. Evaluate personal work and that of others. Incorporate feedback

CS 133JS - Beg. Programming: JavaScript

4 Credit(s)

This course provides students with the concepts and skills required to create dynamic, interactive Web pages using client side JavaScript.

Prerequisite: MTH 060 or higher and CIS 195 or instructor consent

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Discuss the challenges, trends, and technologies used in web development
2. Compare and contrast popular client side web development languages and tools
3. Design, implement, test, and debug scripts that perform typical client side web processing using JavaScript

CS 133N - Beginning Programming: C#

4 Credit(s)

This is the first in a sequence of 2 courses that teaches students the Computer Science concepts and skills underlying programming. The course introduces students to fundamental programming concepts as well as the syntax of the C# programming language and the Visual Studio development environment.

Prerequisite/Corequisite: CS 162C or CS 162P

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Describe introductory programming concepts orally and in writing
2. Develop, test and debug algorithms involving the three structured programming constructs
3. Design, implement, test and debug a C# program using: variables and expressions, selection, repetition, methods and strings
4. Evaluate personal work and that of others. Incorporate feedback

CS 133P - Beginning Programming: Python

4 Credit(s)

This is the first in a sequence of 2 courses that teaches students the Computer Science concepts and skills underlying programming. The course introduces students to fundamental programming concepts as well as the syntax of the Python programming language and the PyCharm development environment.

Prerequisite/Corequisite: CS 162C or CS 162N

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Describe introductory programming concepts orally and in writing
2. Develop, test and debug algorithms involving the three structured programming constructs

3. Design, implement, test and debug a Python program using: variables and expressions, selection, repetition, methods and strings
4. Evaluate personal work and that of others. Incorporate feedback

CS 160 - Orientation to Computer Science

4 Credit(s)

This course explores the discipline and profession of computer science. It provides an overview of computer hardware architecture, the study of algorithms, software design and development, programming languages, data representation and organization, computer networks and security, ethics and the history of computing and its influences on society.

Prerequisite: MTH 095, or MTH 111, or MTH 241, or placement test into MTH 111.

Learning Outcomes

Upon successful completion of this course the student should be able to:

1. Convert numbers from binary to decimal and perform arithmetic operations with binary numbers
2. Create simple electronic circuits with basic logic units and analyze the equivalent logical circuits
3. Deconstruct a computer system into its component parts: applications, operating system, and hardware
4. Compare and contrast alternative programming methodologies and languages
5. Decompose problems and develop algorithms to solve them
6. Describe how programming languages are implemented, including the translation process from high-level to machine-level code
7. Explain communication technologies and how they support computer networks
8. Relate how computer information systems are utilized in different social and business applications
9. Apply ethical standards to computer and internet use and situations
10. Differentiate between the disciplines of Computer Science, Electrical Engineering, Computer Engineering, Software Engineering, Information Technology and Information Systems

CS 161C - Computer Science 1

4 Credit(s)

This is the first in a sequence of 2 courses that teaches students the Computer Science concepts and skills underlying programming. The course introduces students to fundamental programming concepts as well as the syntax of the C++ programming language and the CLion development environment.

Prerequisite: Complete one of the following courses: CIS 125A, CIS 125G, CS 160, MTH 095, MTH 111, MTH 211, MTH 231, MTH 241, or MTH 251 (or by placement)

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Describe introductory programming concepts orally and in writing
2. Develop, test and debug algorithms involving the three structured programming constructs
3. Design, implement, test and debug a C++ program using: variables and expressions, selection, repetition, methods and strings
4. Evaluate personal work and that of others. Incorporate feedback

CS 161N - Computer Science 1

4 Credit(s)

This is the first in a sequence of 2 courses that teaches students the Computer Science concepts and skills underlying programming. The course introduces students to fundamental programming concepts as well as the syntax of the C# programming language and the Visual Studio development environment.

Prerequisite: Complete one of the following: CIS 125A, CIS 125G, CS 160, MTH 095, MTH 111, MTH 211, MTH 231, MTH 241, MTH 251 (or by placement)

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Describe introductory programming concepts orally and in writing
2. Develop, test and debug algorithms involving the three structured programming constructs
3. Design, implement, test and debug a C# program using: variables and expressions, selection, repetition, methods and strings
4. Evaluate personal work and that of others. Incorporate feedback

CS 161P - Computer Science 1

4 Credit(s)

This is the first in a sequence of 2 courses that teaches students the Computer Science concepts and skills underlying programming. The course introduces students to fundamental programming concepts as well as the syntax of the Python programming language and the PyCharm development environment.

Prerequisite: One of the following courses: CIS 125A, CIS 125G, CS 160, MTH 095, MTH 111, MTH 211, MTH 231, MTH 241, MTH 251 (or by placement)

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Describe introductory programming concepts orally and in writing
2. Develop, test and debug algorithms involving the three structured programming constructs
3. Design, implement, test and debug a Python program using: variables and expressions, selection, repetition, methods and strings
4. Evaluate personal work and that of others. Incorporate feedback

CS 162C - Computer Science 2

4 Credit(s)

This is the second in a sequence of 2 courses that teaches students the Computer Science concepts and skills underlying programming. The course introduces students to object oriented programming concepts as well as the syntax of object oriented programming in the C++ programming language. Recursion and data structures are also introduced.

Prerequisite: CS 161C or instructor consent

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Describe object oriented programming concepts orally and in writing
2. Design a class or a system of classes that represent an object oriented solution to a problem
3. Design, implement, test and debug C++ classes and applications that use those classes
4. Evaluate personal work and that of others. Incorporate feedback

CS 162N - Computer Science 2

4 Credit(s)

This is the second in a sequence of 2 courses that teaches students the Computer Science concepts and skills underlying programming. The course introduces students to object oriented programming concepts as well as the syntax of object oriented programming in the C# programming language. Recursion and data structures are also introduced.

Prerequisite: CS 161N or CS 133N or instructor consent

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Describe object oriented programming concepts orally and in writing
2. Design a class or a system of classes that represent an object oriented solution to a problem
3. Design, implement, test and debug C# classes and applications that use those classes
4. Evaluate personal work and that of others. Incorporate feedback

CS 162P - Computer Science 2

4 Credit(s)

This is the second in a sequence of 2 courses that teaches students the Computer Science concepts and skills underlying programming. The course introduces students to object oriented programming concepts as well as the syntax of object oriented programming in the Python programming language. Recursion and data structures are also introduced.

Prerequisite: CS 161P or CS 161C or instructor consent

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Describe object oriented programming concepts orally and in writing
2. Design a class or a system of classes that represent an object oriented solution to a problem
3. Design, implement, test and debug Python classes and applications that use those classes
4. Evaluate personal work and that of others. Incorporate feedback

CS 175 - Introduction to SQL (Structured Query Language)

4 Credit(s)

Students will learn the basics of SQL querying, updating, and creating objects in a database. Topics include basic data retrieval statements, filtering, sorting, and

manipulating data, and basic reporting statements for output processing. Labs will be set up for the students to get hands-on experience in each of the topics presented.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Describe and use basic relational database concepts, structures, and terminology orally and in writing
2. Read and write accurate create table statements
3. Read and write simple select queries to access data in one or more tables
4. Read and write basic SQL statements that will update and delete data from a database

CS 179 - Introduction to Computer Networks

4 Credit(s)

Introduction to Computer Networks covers networking architecture, structure, and functions. The course introduces the principles and structure of IP addressing and the fundamentals of Ethernet concepts, media, and operations to provide a foundation for the curriculum.

Prerequisite: Basic computer literacy

Learning Outcomes

Students who successfully complete this course will be able to:

1. Explain network technologies
2. Explain how devices access local and remote network resources
3. Describe router hardware
4. Explain how switching operates in a small to medium-sized business network
5. Design an IP addressing scheme to provide network connectivity for a small to medium-sized business network
6. Configure initial settings on a network device
7. Implement basic network connectivity between devices
8. Configure monitoring tools available for small to medium-sized business networks

CS 184 - Introduction to Cybersecurity

4 Credit(s)

This course will cover foundational knowledge and essential skills in industry standard domains in the cybersecurity profession. These domains include information security, systems security, network security, mobile security and physical security. This course will also introduce students to the ethical and legal issues and relevant laws related to the cybersecurity field. Students will also explore common use-case scenarios and gain hands-on experience while participating labs.

Prerequisite: Digital literacy

Learning Outcomes

Students who successfully complete this course will be able to:

1. Discuss evolution and fundamental concepts of cybersecurity
2. Explain the fundamentals of the cybersecurity profession, including common bodies of knowledge and skillsets
3. Interpret risk strategies and solutions to meet the needs of an organization, with the understanding that there is often more than one possible solution for each scenario

CS 188 - Wireless Networking

4 Credit(s)

This course introduces the student to wireless computer networking. It provides practical experience in installing, managing, and troubleshooting wireless local area networks (WLANs). Wireless security threats and methods for avoiding breaches of security are covered. When the student finishes the course, they will have a solid understanding of wireless networking concepts and will have the basic skills needed for installing such a network and making it secure. The course has a hands-on focus.

Prerequisite: CS 179 or instructor consent

Learning Outcomes

Students who successfully complete this course will be able to:

1. Identify the advantages and disadvantages of wireless networking
2. Know the hardware components used in wireless networks
3. Install and configure the basic hardware components used in wireless networks
4. Know the fundamentals of radio wave data communication
5. Know the industry standards associated with wireless networking
6. Know wireless security principles and be able to identify network vulnerabilities
7. Implement wireless security protections
8. Monitor and troubleshoot wireless connections

CS 189 - Routing and Switching Essentials

4 Credit(s)

This course covers the architecture, components, and operations of routers and switches in a small network. Students learn how to configure a router and a switch for basic functionality.

Prerequisite: CS 179 or instructor consent

Learning Outcomes

Students who successfully complete this course will be able to:

1. Determine how a router will forward traffic based on the contents of a routing table
2. Demonstrate how switching operates in a small to medium-sized business network
3. Use monitoring tools and network management protocols to troubleshoot data networks

CS 205 - System Programming and Architecture

4 Credit(s)

Introduces how high-level software runs on a computer system. Covers C programming and the assembly that C code becomes. Presents the fundamentals of computer architecture and how instructions and data are represented at the machine level. Provides experience analyzing compiled code to build necessary skills for future work in cybersecurity, operating systems, compilers, and other CS topics involving low-level computation.

Prerequisite: CS 161C or CS 161N or CS 161P (or CS 133C or CS 133N or CS 133P)

Learning Outcomes

Students who successfully complete this course will be able to:

1. Describe the major components of computer architecture; explain their purposes and interactions and the instruction execution cycle
2. Describe a basic instruction set architecture, including the arithmetic, logic, and control instructions; user and control registers; and addressing modes
3. Do simple arithmetic in hexadecimal, decimal, and binary notation, and convert among these notations
4. Explain how data types such as integers, characters, pointers, and floating-point numbers are represented and used at the assembly level
5. Write C language programs that use control structures, functions, IO, arrays, and dynamic memory
6. Describe each step of the compilation process by which C language programs are transformed into machine code
7. Explain how high-level programming constructs such as arrays, structures, loops, and stack-based function calls are implemented in machine code. Recognize and reverse engineer the same
8. Demonstrate and use a debugger to analyze program flow, inspect register and stack contents
9. Identify and fix performance issues in C programs that are caused by machine level concepts
10. Explain how the information in this course is important within the overall context of computer science

CS 233C - Intermediate Programming: C++

4 Credit(s)

This is the second in a sequence of 2 courses that teaches students the Computer Science concepts and skills underlying programming. The course introduces students to object oriented programming concepts as well as the syntax of object oriented programming in the C++ programming language. Recursion and data structures are also introduced.

Prerequisite: Complete one of the following: CS 161C or CS 133C. Students must also complete CS 162N or CS 162P to enroll in this course.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Describe object oriented programming concepts orally and in writing
2. Design a class or a system of classes that represent an object oriented solution to a problem
3. Design, implement, test and debug C++ classes and applications that use those classes
4. Evaluate personal work and that of others. Incorporate feedback

CS 233JS - Intermediate Programming: JavaScript

4 Credit(s)

This is the second in a sequence of two JavaScript programming courses. The sequence teaches students to develop client-side or front-end code for browser-

based applications. The course introduces intermediate-level programming concepts and skills as well as JavaScript, syntax, tools, and frameworks required for modern front-end development.

Prerequisite: CS 133JS

Learning Outcomes

Students who successfully complete this course will be able to:

1. Use modern JavaScript constructs and tools to design, implement, test, and debug front-end browser based applications
2. Give and receive feedback orally and in writing

CS 233N - Intermediate Programming C#

4 Credit(s)

This is the second in a sequence of 2 courses that teaches students the Computer Science concepts and skills underlying programming. The course introduces students to object oriented programming concepts as well as the syntax of object oriented programming in the C# programming language. Recursion and data structures are also introduced.

Prerequisite: Complete one of the following: CS 161N or CS 133N. Students must also complete CS 162C or CS 162P to enroll in this course.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Describe object oriented programming concepts orally and in writing
2. Design a class or a system of classes that represent an object oriented solution to a problem
3. Design, implement, test and debug C# classes and applications that use those classes
4. Evaluate personal work and that of others. Incorporate feedback

CS 233P - Intermediate Programming: Python

4 Credit(s)

This is the second in a sequence of 2 courses that teaches students the Computer Science concepts and skills underlying programming. The course introduces students to object oriented programming concepts as well as the syntax of object oriented programming in the Python programming language. Recursion and data structures are also introduced.

Prerequisite: Complete one of the following: CS 161P or CS 133P or CS 161C. Students must also complete CS 162C or CS 162N to enroll in this course.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Describe object oriented programming concepts orally and in writing
2. Design a class or a system of classes that represent an object oriented solution to a problem
3. Design, implement, test and debug Python classes and applications that use those classes
4. Evaluate personal work and that of others. Incorporate feedback

CS 233S - Python for Systems Administrators

4 Credit(s)

The course introduces intermediate level programming concepts and skills and Python syntax. Topics will include: list processing, interacting with the file system, file processing, regular expressions, and reporting.

Prerequisite: CS 133P or CS 161P or CS 233P

Learning Outcomes

Students who successfully complete this course will be able to:

1. Design, implement, test and debug systems of classes in Python
2. Design, implement, test and debug intermediate level object oriented programs in Python
3. Design, implement, test and debug multi-form applications in Python
4. Design, implement, test and debug data driven applications in Python
5. Describe programming concepts, themes and issues orally and in writing

CS 234N - Advanced Programming: C#

4 Credit(s)

This is the third in a sequence of three courses that teaches students to develop desktop applications in the .NET environment. The course introduces advanced-level programming concepts and skills and C# syntax. It allows students to develop more sophisticated object-oriented, data-driven desktop applications.

Prerequisite: CS 162N or CS 233N or instructor consent

Learning Outcomes

Students who successfully complete this course will be able to:

1. Design, implement, test, and debug systems of classes in C#
2. Design, implement, test, and debug advanced level object-oriented programs in

C#

3. Design, implement, test, and debug advanced level object-oriented programs in C#

4. Describe programming concepts, themes, and issues orally and in writing

CS 240U - Advanced Unix/Linux: Server Management

4 Credit(s)

Covers network administration of Unix/Linux. Topics: Operating system installation, configuration, troubleshooting, and network server configuration (for example: DHCP, DNS, NFS, Samba, Apache, databases, and security). The course has a hands-on focus.

Prerequisite: CIS 140U or instructor consent

Learning Outcomes

Students who successfully complete this course will be able to:

1. Understand the installation process for a major computer operating system
 2. Configure user accounts and groups
 3. Setup network printing
 4. Understand how to install, configure, and share end-user applications including Web 2.0
 5. Configure network services, such as file services, DHCP, DNS, and Web services
 6. Configure interoperability with other network operating systems
 7. Understand and configure operating system security
-

CS 240W - Advanced Windows: Server Management

4 Credit(s)

This course covers advanced Windows Server operating system and networking concepts. Topics covered include: installation, configuration, virtualization, Active Directory, scripts, DNS, file systems, group policy, networking, web servers, and DHCP.

Prerequisite: CS 179 or instructor consent

Learning Outcomes

Students who successfully complete this course will be able to:

1. Install, update, and configure Windows Server
 2. Install and manage Active Directory Services
 3. Create and manage user accounts and groups
 4. Manage shared folders and permissions
 5. Manage network printing
 6. Manage disk storage and disk partitions
 7. Manage network services including DHCP and web services
 8. Manage group policy objects
 9. Monitor server performance and network traffic
-

CS 246 - System Design

4 Credit(s)

In this course, students will learn to design and plan software systems. Topics covered will include requirements gathering, design evaluation and documentation, testing, and object-oriented program design. By the end of the course, students will have produced a design for a significant software project in a team environment.

Prerequisite: CS 260 or CS 234N or CS 295N

Learning Outcomes

Students who successfully complete this course will be able to:

1. Explain what is meant by software engineering and why it is valued
 2. Discuss the differences between peer-to-peer and server based version control systems and give an example of each
 3. Demonstrate the use of an issue tracking system
 4. Explain the advantages and disadvantages of waterfall and agile development paradigms
 5. Create effective system design documentation
-

CS 260 - Data Structures 1

4 Credit(s)

This course is intended primarily for students seriously interested in computer science. Students will demonstrate the usage of advanced data structures, including linked-lists and tree structures using pointers, and advanced structure programming methods through a variety of programming projects.

Prerequisite: CS 162C or CS 162P or CS 162N or CS 233C or CS 233N or CS 233P AND (MTH 111 or MTH 112 or MTH 231 or MTH 241 or MTH 251) or instructor consent

Learning Outcomes

Students who successfully complete this course will be able to:

1. Define and implement data structures including stacks, queues, linked lists, trees, hash tables, and graphs
 2. Program recursively and define how recursion works
 3. Measure and analyze algorithms for efficiency considerations
 4. Define and implement multiple search and sort algorithms
 5. Select the appropriate data structure and algorithm for a given problem
-

CS 273 - Introduction to Virtualization and Cloud Computing

4 Credit(s)

This course introduces the student to virtualization technologies and the fundamentals of cloud computing, to include essential characteristics of a cloud environment, various cloud services and deployment models, the role of virtualization in cloud computing, and major cloud providers. Students will also explore some of the challenges of cloud deployment, with emphasis in the areas of security and business continuity.

Prerequisite: CS 189 and CS 240W

Learning Outcomes

Students who successfully complete this course will be able to:

1. Discuss evolution and fundamental concepts of cloud computing
 2. Interpret characteristics of cloud computing and how they apply to traditional computing
 3. Explain cloud types and technical perspectives
 4. Apply knowledge of cloud computing to planning and implementation
 5. Interpret cloud computing standards and risks as well as consequences of Cloud computing
 6. Evaluate technical challenges and risks for cloud computing and understand mitigation methods
-

CS 275 - Basic Database SQL

4 Credit(s)

This training course is valuable for anyone who needs to learn SQL programming. The course is designed for students new to writing SQL queries or having insufficient practice experience. It will provide a solid foundation of the SQL programming language that enables students to query and manipulate databases. Working in Oracle throughout this course, students work with the ANSI/ISO standard with the SQL implementation of the database product.

Prerequisite: CS 161N or CS 161C or CS 161P or CS 133N or CS 133C or CS 133P or BT 223 or instructor consent

Learning Outcomes

Students who successfully complete this course will be able to:

1. Write, test and debug SQL code based on ANSI/ISO standards to retrieve simple to complex data sets including: single or multiple tables, row functions, aggregate functions, subqueries
 2. Write, test and debug SQL code based on ANSI/ISO standards to update database content and handle transactions
 3. Write, test and debug SQL code based on ANSI/ISO standards to build and maintain database structures including views, users and permissions
 4. Describe different aspects of the data they are accessing-what are their results and could they be interpreted differently
-

CS 276 - Database Systems and Modeling

4 Credit(s)

This is an introduction to production-scale, relational database environments. Included in the course are discussion and applications of database models, entity relationship design, normalization, as well as an introduction to big data databases.

Prerequisite: CS 275

Learning Outcomes

Students who successfully complete this course will be able to:

1. Identify and explain current data base models and their underlying advantages and disadvantages
2. Design a moderately complex database structure using Entity-Relationship diagrams
3. Use Normalization techniques to verify a database design
4. Create database tables, and insert and update data into the tables using advanced SQL
5. Identify and describe issues and performance bottlenecks concerning enterprise-level processing by a Database Management System

CS 279 - Scaling Networks

4 Credit(s)

Scaling Networks covers the architecture, components, and operations of routers and switches in larger and more complex networks. Students learn how to configure routers and switches for advanced functionality.

Prerequisite: CS 189 or instructor consent

Learning Outcomes

Students who successfully complete this course will be able to:

1. Configure and troubleshoot routers and switches
2. Resolve common issues with OSPF, EIGRP, and STP in both IPv4 and IPv6 networks
3. Implement a WLAN in a small-to-medium network

CS 284 - Network Security Fundamentals

4 Credit(s)

This course covers fundamental computer and network security concepts. It emphasizes securing the operating system, applications, media, network devices, web pages, and other network services. In addition, types of attacks, digital certificates, keys, and designing and implementing security policies and procedures are discussed. This course has a hands-on focus.

Prerequisite: CS 179 or CS 184

Learning Outcomes

Students who successfully complete this course will be able to:

1. Identify and configure authentication and access control properties
2. Identify and counterattack attacks
3. Harden the software and network devices and be able to secure the media and physical access
4. Identify and harden web page, e-mail, File Transfer Protocol, Directory Services, and wireless network vulnerabilities
5. Understand and implement various security techniques using keys and digital certificates
6. Identify and implement adequate security policies and procedures

CS 285 - Cybersecurity Operations

4 Credit(s)

This course is designed to teach students basic incident response and incident handling, including identifying sources of attacks and security breaches, analyzing security logs and network traffic, performing postmortem analysis, and implementing and modifying security measures. It will provide them with the fundamental knowledge and core skills needed to begin working in a Security Operations Center (SOC) as a junior analyst.

Prerequisite: CS 189 or CS 279 and CS 284

Learning Outcomes

Students who successfully complete this course will be able to:

1. Learn basic incident analysis and methods, using industry standard tools
2. Explain basic event correlation, normalization, and metrics of event data
3. Describe common attack vectors against networks and hosts
4. Understand SOC workflow management system and automation
5. Interpret log data to identify malicious activity on Windows and Linux hosts
6. Using security monitoring techniques, apply the processes of identifying sources and types of data and events

CS 286 - Firewalls and VPNs

4 Credit(s)

This course gives the students a real world understanding of how firewalls and VPNs can be used to enhance the protection of internal networks. It gives hands-on experience installing, configuring and managing firewalls and VPNs. Commercial firewalls, VPNs, security configuration guidance tools, and tools to monitor the effectiveness of the solutions will be used. You will explore proven strategies for defending your networks against unauthorized access, denial-of-service, the weaknesses of firewall architectures, security processes, address translation, content filtering, spoofing, and other advanced issues. This course has a hands-on focus.

Prerequisite: CS 284 and CS 189 or CS 279, or instructor consent

Learning Outcomes

Students who successfully complete this course will be able to:

1. Discuss the purpose and objectives of firewalls and VPNs
2. Discuss the types of firewalls and VPNs
3. Discuss issues involved in implementing firewalls and VPNs
4. Translate the company policy into firewall and VPN policies
5. Install and configure multiple firewalls and VPNs

6. Test firewall and VPN rules and read associated log files
7. Compare baseline and post resolution vulnerability reports
8. Install and utilize various industry accepted tools

CS 288 - Network Monitoring and Management

4 Credit(s)

Covers network monitoring and management for network administrators. Topics: Analyzing network traffic, monitoring servers and internetworking devices, configuration management solutions, and tools/skills for maintaining acceptable network performance. Functions as a capstone course for the network degree.

Prerequisite: CS 240U and (CS 179 or CS 189)

Learning Outcomes

Students who successfully complete this course will be able to:

1. Learn the steps in the network troubleshooting process
2. Understand SNMP and how it is used to monitor the network
3. Configure servers, routers, and switches for SNMP
4. Understand packet analysis and how it is used to monitor network traffic and troubleshoot network problems
5. Learn to use an enterprise network monitoring package to monitor performance and find network problems
6. Learn to troubleshoot network problems (both hardware and software) using network test devices and troubleshooting commands and utilities
7. Learn proactive management techniques and planning for growth
8. Learn how to configure event handlers and notifications/alerts triggered by network problems
9. Learn how to create and use performance baselines and the characteristics of a slow network
10. Learn how to use performance and error logs
11. Learn how to discover network connectivity problems.
12. Learn how to track network resources such as processor load, disk utilization, and memory usage
13. Learn how to create and use important configuration management documentation
14. Learn techniques for optimizing performance through caching, for example, setting up a proxy server
15. Learn techniques for increasing throughput for latency-sensitive applications like streaming video or VoIP, for example, through quality of service (QoS) and traffic shaping techniques

CS 289 - Connecting Networks

4 Credit(s)

Connecting Networks discusses the WAN technologies and network services required by converged applications in a complex network. The course enables students to understand the selection criteria of network devices and WAN technologies to meet network requirements.

Prerequisite: CS 279 or instructor consent

Learning Outcomes

Students who successfully complete this course will be able to:

1. Configure and troubleshoot network devices
2. Resolve common issues with data link protocols
3. Resolve common issues with OSPF, EIGRP, and STP in both IPv4 and IPv6 networks
4. Implement virtual private network (VPN) operations in a complex network

CS 290 - Ethical Hacking Fundamentals

4 Credit(s)

This course will introduce the student to the ethical use of various security assessment tools and techniques commonly used to locate weaknesses and vulnerabilities of computer and network systems. This course will cover common system vulnerabilities, exploits, and countermeasures. Students will learn various computer hacking skills in order to understand how to defend against similar techniques. Students will also explore real world scenarios, gaining hands-on experience while participating in scenario-based labs.

Prerequisite: CS 189 and CS 284 or instructors consent

Learning Outcomes

Students who successfully complete this course will be able to:

1. Discuss evolution and fundamental concepts of network security
2. Explain tools, techniques and procedures commonly used by a cyber attacker
3. Apply knowledge of ethical hacking techniques to better understand common vulnerabilities and weaknesses

4. Interpret common techniques of an attacker and determine solutions to counteract an attack
5. Evaluate technical challenges and risks to external network systems and understand mitigation method

CS 295N - Web Development 1: ASP.NET

4 Credit(s)

This is the first in a sequence of two courses that teaches student who have a working knowledge of C# and Visual Studio to develop web based applications in the .NET environment. This course introduces students to server side web programming concepts as well as the ASP.NET framework.

Prerequisite: CS 233JS AND CS 162N or CS 233N or instructor consent

Prerequisite/Corequisite:

Corequisite: CS 234N

Learning Outcomes

Students who successfully complete this course will be able to:

1. Design, implement, test and debug web based applications that consist of a single page using ASP.NET and C#
2. Design, implement, test and debug web based applications that maintain state across multiple pages using ASP.NET and C#
3. Design, implement, test and debug web based applications that interact with files using ASP.NET and C#
4. Describe server side web programming concepts, themes and issues orally and in writing

CS 295R - Web Development 1: React

4 Credit(s)

This course introduces students to React, a JavaScript library for building single-page web-based applications. It is intended for students with an intermediate level of knowledge of the JavaScript programming language and JavaScript development tools.

Prerequisite: CS 233JS

Learning Outcomes

Students who successfully complete this course will be able to:

1. Use React, a modern JavaScript framework, to design, implement, test, and debug single-page browser-based applications
2. Give and receive feedback orally and in writing

CS 296N - Web Development 2: ASP.NET

4 Credit(s)

This is the second in a sequence of 2 courses that teaches student who have a working knowledge of C# and Visual Studio to develop web based applications in the .NET environment.

Prerequisite: CS 295N or instructor consent

Learning Outcomes

Students who successfully complete this course will be able to:

1. Design, implement, test and debug web based applications that interact with a database using ASP.NET and C#
2. Design, implement, test and debug web based applications that interact with a XML using ASP.NET and C#
3. Design, implement, test and debug web based applications that have rich client interfaces using AJAX
4. Design, implement, test and debug web based applications that have rich client interfaces using Silverlight
5. Describe server side web programming concepts, themes and issues orally and in writing

CS 297 - Programming Capstone

4 Credit(s)

This is the final course for both the Computer Programming and Computer Simulation and Game Development programs. This course ties together the topics covered in the first and second year courses. It emphasizes practical application and problem solving and is project oriented. Students will work in teams to create a working, non-trivial software application using current technologies and methodologies. Note: CS 297 was formerly numbered CS 297P. A student who has taken this class under a previous number may not take it again under this new number and receive duplicate credit.

Prerequisite: CS 246 or instructor consent

Learning Outcomes

Students who successfully complete this course will be able to:

1. Analyze, design and implement a small scale, but significant programming project
2. Demonstrate an ability to integrate knowledge and skills acquired in previous coursework
3. Demonstrate the ability to work as an effective member of a project team
4. Research, analyze and describe the current state of the state and regional job markets
5. Participate in self-evaluation of work skill strengths
6. Prepare an effective cover letter and resume for an employment application
7. Through mock interviews, demonstrate an ability to respond to typical general and scenario questions
8. Develop a plan for professional growth

Construction

CST 110 - Blueprint Reading 1

3 Credit(s)

Provides skills in understanding blueprints. Emphasizes fundamentals of blueprint reading, including development of skills in understanding basic lines, views, dimensions, symbols, notations and computation.

Prerequisite: RD 087 and EL 115 OR prior college OR placement test.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Describe the historical foundations of modern building plans for residential construction
2. Interpret architectural sketches to deepen understanding of 2-D building plans
3. Identify construction methods referenced in building plans
4. Use building specifications to determine particular material and process needs for a residential construction project
5. Locate and interpret construction details on residential building plans
6. Accurately apply basic print reading principles to simple building plans

CST 111 - Construction Orientation and Environment

2 Credit(s)

Introduction to the construction industry. Economic and environmental influences affecting the construction industry are discussed. Current tools and materials of today's industry are introduced. Occupations in the construction field are explored as well as professional opportunities for construction graduates.

Prerequisite: RD 087 and EL 115 OR prior college OR placement test.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Describe vocational, technical, and professional opportunities in the construction field.
2. Describe construction job titles and their descriptions and expected wages or salaries.
3. Understand basic concepts in construction organizations, labor/management problems, and the environmental influence affecting construction practices.
4. Discuss new methods and materials used in local construction industry.

CST 116 - Construction Estimating

4 Credit(s)

Study of techniques used to estimate construction materials and costs for residential and small commercial structures. Tips for creating accurate estimates.

Prerequisite: CST 110

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Explain the importance and function of accurate material and cost estimating in construction planning and management
2. Describe at least one technique that can be used to accurately estimate material quantities and labor time required to complete each phase of a construction project
3. Organize detailed cost estimate work so that no information is overlooked, and all steps can be easily retraced
4. Accurately prepare material cost estimates as compared to actual cost or professional estimates
5. Account for possible unforeseen variables in construction cost

CST 118 - Building Construction

1-5 Credit(s)

The three CST118 courses provide technical information relevant to today's building practices. Through hands-on projects, field visits, and lectures students become familiar with the skills and knowledge necessary to succeed in today's construction environment. Work required to plan, design, and construct building structures is explored. A variety of elements and topics related to the materials and methods used in the construction of buildings, including planning the site, foundation, framing, and interior and exterior finishing. This course provides an orientation to electrical, mechanical, and plumbing systems. CST 118 A/B/C consists of a total of 15 credits (264 hours). Majors should enroll in 5 credits per term for three terms to satisfactorily complete the CST 118 sequence (A/B/C).

Prerequisite: RD 087 and EL 115 OR prior college OR placement test.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Demonstrate knowledge of current construction practices.
2. Demonstrate knowledge of fundamental carpentry skills.
3. Demonstrate knowledge/skills in material selection.
4. Describe duties of the sub-contractor.
5. Describe the economic importance of the shelter industry.
6. Demonstrate preparedness for job opportunities.
7. Apply appropriate industry safety practices.

CST 118A - Building Construction A

1 to 5 Credit(s)

The three CST118 courses provide technical information relevant to today's building practices. Through hands-on projects, field visits, and lectures students become familiar with the skills and knowledge necessary to succeed in today's construction environment. Work required to plan, design, and construct building structures is explored. A variety of elements and topics related to the materials and methods used in the construction of buildings, including planning the site, foundation, framing, and interior and exterior finishing. This course provides an orientation to electrical, mechanical, and plumbing systems. CST 118 A/B/C consists of a total of 15 credits (264 hours). Majors should enroll in 5 credits per term for three terms to satisfactorily complete the CST 118 sequence (A/B/C).

Prerequisite: RD 087 and EL 115 OR prior college OR placement test.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Demonstrate knowledge of current construction practices.
2. Demonstrate knowledge of fundamental carpentry skills.
3. Demonstrate knowledge/skills in material selection.
4. Describe duties of the sub-contractor.
5. Describe the economic importance of the shelter industry.
6. Demonstrate preparedness for job opportunities.
7. Apply appropriate industry safety practices.

CST 118B - Building Construction B

1 to 5 Credit(s)

The three CST118 courses provide technical information relevant to today's building practices. Through hands-on projects, field visits, and lectures students become familiar with the skills and knowledge necessary to succeed in today's construction environment. Work required to plan, design, and construct building structures is explored. A variety of elements and topics related to the materials and methods used in the construction of buildings, including planning the site, foundation, framing, and interior and exterior finishing. This course provides an orientation to electrical, mechanical, and plumbing systems. CST 118 A/B/C consists of a total of 15 credits (264 hours). Majors should enroll in 5 credits per term for three terms to satisfactorily complete the CST 118 sequence (A/B/C).

Prerequisite: RD 087 and EL 115 OR prior college OR placement test.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Demonstrate knowledge of current construction practices.
2. Demonstrate knowledge of fundamental carpentry skills.
3. Demonstrate knowledge/skills in material selection.
4. Describe duties of the sub-contractor.
5. Describe the economic importance of the shelter industry.
6. Demonstrate preparedness for job opportunities.
7. Apply appropriate industry safety practices.

CST 118C - Building Construction C

1 to 5 Credit(s)

The three CST118 courses provide technical information relevant to today's building practices. Through hands-on projects, field visits, and lectures students become familiar with the skills and knowledge necessary to succeed in today's construction environment. Work required to plan, design, and construct building structures is explored. A variety of elements and topics related to the materials and methods used in the construction of buildings, including planning the site, foundation, framing, and interior and exterior finishing. This course provides an orientation to electrical, mechanical, and plumbing systems. CST 118 A/B/C consists of a total of 15 credits (264 hours). Majors should enroll in 5 credits per term for three terms to satisfactorily complete the CST 118 sequence (A/B/C).

Prerequisite: RD 087 and EL 115 OR prior college OR placement test.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Demonstrate knowledge of current construction practices.
2. Demonstrate knowledge of fundamental carpentry skills.
3. Demonstrate knowledge/skills in material selection.
4. Describe duties of the sub-contractor.
5. Describe the economic importance of the shelter industry.
6. Demonstrate preparedness for job opportunities.
7. Apply appropriate industry safety practices.

CST 119 - Building Construction Surveying

3 Credit(s)

A beginning course in surveying concepts and techniques with application to building construction. Fundamentals of surveying methods and the use and care of surveying equipment as related to surveying tasks involved in building construction. Measuring, marking and layout for home construction. Emphasis is placed on field practice. CONSTRUCTION MAJORS ONLY.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Describe in writing the surveying techniques for laying out building lines; estimating quantities of material excavation from a building site; establishing and checking site and building elevations.
2. Set-up and properly adjust a transit and builder's level and demonstrate the use of a transit, level, chain, tape, rod, and plumb bob in obtaining horizontal and vertical measurements.
3. Construct a building line layout using surveying equipment and the batter-board method from a prescribed blueprint to 1/4 accuracy.

CST 122 - Construction Codes

2 Credit(s)

Various codes specifying the standards of construction as referenced by the Oregon Residential Specialty Code. Codes and basic methods of construction with explanations for their purpose. Building codes and the function of government agencies (state and local) charged with the administration and inspection of building construction will also be discussed.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Specify the standards of one and two family dwelling construction.
2. Establish the philosophy, administration, jurisdiction and enforcement of codes uniformly for the health and safety of people who inhabit dwelling structures.

CST 201 - Sustainable Building Practices

3 Credit(s)

Overview of sustainable construction practices currently applied in the industry. Following the "Leadership in Energy and Environmental Design" (LEED) standards, students will explore site and land use, water, materials, energy, atmosphere, and indoor environmental quality.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Demonstrate a basic understanding of Sustainability and Green building.
2. Understand the concepts and best practices associated with the site and land use in the building process.
3. Explore the importance of water quality and conservation both inside and outside the building.
4. Determine the energy and atmospheric impacts of buildings and building products, and how field personnel can contribute to energy performance in the planning and construction process.

5. Explore the role that materials selection and use plays in green building and examines how to identify, select and procure green materials.
6. Explore how green building construction, maintenance and renovation can result in improved indoor environmental quality (IEQ).

CST 211 - Blueprint Reading 2

3 Credit(s)

Advanced study related to the needs of the individual in the understanding and interpretation of blueprints for special features of design, fabrication, construction, and assembly.

Prerequisite: CST 110

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Calculate quantities of materials from building plans
2. Interpret architectural sketches to deepen understanding of 2-D building plans
3. Identify construction methods referenced in building plans
4. Use building specifications to determine particular material and process needs for a commercial construction project
5. Locate and interpret construction details on commercial building plans
6. Accurately apply basic print reading principles to both simple and complex building plans

Cooperative Education**AM 280 - Co-op Ed: Automotive**

3-12 Credit(s)

This course provides automotive-related learning in businesses and organizations. The student will have the opportunity to integrate theory and practice gained in the classroom with practical experience in the professional world. In this course a student will develop skills, explore career options and network with professionals and employers while earning credit toward a degree.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience
2. Describe their work experience in their career field and growth in knowledge of the career field
3. Demonstrate and explain advanced skills and knowledge gained at the workplace
4. Demonstrate foundational job search and workplace competencies
5. Describe understanding of workplace culture
6. Demonstrate college core learning outcomes in communication and use of technology

AP 280 - Co-op Ed: Pro Pilot

3-12 Credit(s)

This course provides flight-related learning in businesses and organizations. The student will have the opportunity to integrate theory and practice gained in the classroom with practical experience in the professional world. In this course a student will develop skills, explore career options and network with professionals and employers while earning credit toward a degree.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Integrate classroom learning with field experience
2. Describe their work experience in their career field and growth in knowledge of the career field
3. Demonstrate and explain advanced skills and knowledge gained at the workplace
4. Demonstrate foundational job search and workplace competencies
5. Describe understanding of workplace culture
6. Demonstrate college core learning outcomes in communication and use of technology

ART 280A - Co-op Ed: Art and Applied Design

3-12 Credit(s)

This course offers career-related work experience in community businesses and organizations. Students integrate theory and practice gleaned in the classroom with practical experience in the professional world. Contact the art co-op coordinator before registering. Course content and expected learning proficiencies vary term to term. Course may be repeated.

Prerequisite: Instructor approval

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience
2. Describe their work experience in their career field and growth in knowledge of the career field
3. Demonstrate and explain advanced skills and knowledge gained at the workplace
4. Demonstrate foundational job search and workplace competencies
5. Describe understanding of workplace culture
6. Demonstrate college core learning outcomes in communication and use of technology

AV 280 - Co-op Ed: Aviation Maintenance

3-12 Credit(s)

This course provides aviation maintenance-related learning in businesses and organizations. The student will have the opportunity to integrate theory and practice gained in the classroom with practical experience in the professional world. In this course a student will develop skills, explore career options and network with professionals and employers while earning credit toward a degree.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience.
2. Describe their work experience in their career field and growth in knowledge of the career field.
3. Demonstrate and explain advanced skills and knowledge gained at the workplace.
4. Demonstrate foundational job search and workplace competencies.
5. Describe understanding of workplace culture.
6. Demonstrate college core learning outcomes in communication and use of technology.

BA 280 - Co-op Ed: Business Management

3-12 Credit(s)

In this internship course students will gain work experience in area businesses related to supervision, management, office operations, project management, human resources, sales and marketing. Students will integrate theory and practice, develop skills, and expand career knowledge while earning credit toward a degree. Meet with Business Co-op Coordinator the term before starting your internship.

Prerequisite: BT 206

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience.
2. Describe their work experience in their career field and growth in knowledge of the career field.
3. Demonstrate and explain advanced skills and knowledge gained at the workplace.
4. Demonstrate foundational job search and workplace competencies.
5. Describe understanding of workplace culture.
6. Demonstrate college core learning outcomes in communication and use of technology.

BA 280AA - Co-op Ed: Administrative Professional

3-12 Credit(s)

In this internship course students will gain administrative support work experience in area businesses and organizations. Students will integrate theory and practice, develop skills and expand career knowledge while earning credit toward a degree. Meet with Business Co-op Coordinator the term before starting your internship.

Prerequisite: BT 206

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience
2. Describe their work experience in their career field and growth in knowledge of the career field
3. Demonstrate and explain advanced skills and knowledge gained at the workplace
4. Demonstrate foundational job search and workplace competencies
5. Describe understanding of workplace culture
6. Demonstrate college core learning outcomes in communication and use of technology

BA 280AC - Co-op Ed: Accounting

3-12 Credit(s)

In this internship course students will gain accounting-related work experience in area businesses and organizations. Students will integrate theory and practice, develop skills and expand career knowledge while earning credit toward a degree. Meet with Business Co-op Coordinator the term before starting your internship.

Prerequisite: BT 206**Learning Outcomes**

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience.
 2. Describe their work experience in their career field and growth in knowledge of the career field.
 3. Demonstrate and explain advanced skills and knowledge gained at the workplace.
 4. Demonstrate foundational job search and workplace competencies.
 5. Describe understanding of workplace culture.
 6. Demonstrate college core learning outcomes in communication and use of technology.
-

BI 280 - Co-op Ed: Biology

3-12 Credit(s)

This internship course offers a work experience that integrates theory and practice in the field of biology. It provides opportunities to develop skills, explore career options and network with professionals and employers while earning academic credit.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience.
 2. Describe their work experience in their career field and growth in knowledge of the career field.
 3. Demonstrate and explain advanced skills and knowledge gained at the workplace.
 4. Demonstrate foundational job search and workplace competencies.
 5. Describe understanding of workplace culture
 6. Demonstrate college core learning outcomes in communication and use of technology.
-

BT 206 - Co-op Ed: Business Seminar

2 Credit(s)

Students will increase their understanding of industry expectations as well as develop job search tools and skills. Course is designed to help students present themselves to employers in a competent and professional manner and to move initially into their cooperative education internships and then into their professional careers.

Prerequisite: BA 101 and BT 120**Learning Outcomes**

Upon successful completion of this course, the student should be able to:

1. Communicate both orally and in writing using proper and current business etiquette, format and content. Students will demonstrate competent skills in the following areas: emailing, letter writing, resume writing, job application preparation, reference sheet preparation and interviewing skills.
 2. Develop foundation workplace competencies and workplace culture. Students will be able to describe and demonstrate proper business office etiquette, appropriate interview attire, and business meeting behavior.
 3. Think critically related to job search and on-the-job performance practices and topics. Students will be able to: clarify and check assumptions; apply skills and knowledge to real world practices through action and decision especially when rapid judgment is called for; demonstrate independent judgment; and be able to explain alternative interpretations and perspectives.
-

CA 280 - Co-op Ed: Culinary Arts

1-7 Credit(s)

This course provides the student with culinary arts-related work experience in community businesses and organizations. The student will have the opportunity to integrate theory and practice gained in the classroom with practical experience in the professional world.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience
2. Gain work experience in the student's career field
3. Be exposed to advanced skills and knowledge
4. Develop foundation workplace competencies

5. Be exposed to job opportunities and potentials; clarify and confirm career goals
 6. Increase understanding of workplace culture
-

CH 280 - Co-op Ed: Physics-Chemistry

3-12 Credit(s)

This internship course offers a work experience that integrates theory and practice in the fields of physics or chemistry. It provides opportunities to develop skills, explore career options and network with professionals and employers while earning academic credit.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience.
 2. Describe their work experience in their career field and growth in knowledge of the career field.
 3. Demonstrate and explain advanced skills and knowledge gained at the workplace.
 4. Demonstrate foundational job search and workplace competencies.
 5. Describe understanding of workplace culture
 6. Demonstrate college core learning outcomes in communication and use of technology.
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CJA 280 - Co-op Ed: Criminal Justice

3-12 Credit(s)

This course provides the student with criminal justice-related work experience in public safety agencies and related community organizations. The student will have the opportunity to integrate theory with practical experience in the professional world. In this course a student may develop skills, explore career options, and network with professionals and employers while earning credit toward a degree.

Prerequisite: CJA 100 or instructor permission**Learning Outcomes**

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience.
 2. Describe their work experience in their career field and growth in knowledge of the career field.
 3. Demonstrate and explain advanced skills and knowledge gained at the workplace.
 4. Demonstrate foundational job search and workplace competencies.
 5. Describe understanding of workplace culture.
 6. Demonstrate college core learning outcomes in communication and use of technology.
-

COOP 206 - Co-op Ed: Internship Seminar

1-2 Credit(s)

Students will increase their understanding of industry expectations while developing job search tools and skills. Students will learn and practice presenting themselves to employers in a competent and professional manner in preparation for a cooperative education internship and, ultimately, a professional career. Coursework is delivered online.

Learning Outcomes

Upon completion of this course, students will be able to:

1. Communicate orally and in writing using proper and current business etiquette, format and content.
 2. Develop an understanding of and be able to effectively communicate business skills and abilities, orally and in writing.
 3. Develop foundational workplace competencies and workplace culture.
 4. Critically think in relation to job search and on-the-job performance practices and topics.
-

COOP 280 - Co-op Ed

1-12 Credit(s)

This internship course offers a work experience that integrates theory and practice in the field. It provides opportunities to develop skills, explore career options and network with professionals and employers while earning academic credit toward the degree.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Integrate classroom learning with field experience
2. Describe their work experience in their career field and growth in knowledge of the career field
3. Demonstrate and explain advanced skills and knowledge gained at the workplace
4. Demonstrate foundational job search and workplace competencies
5. Describe understanding of workplace culture

6. Demonstrate college core learning outcomes in communication and use of technology

COOP 280MR - Co-op Ed: Medical Receptionist

3-12 Credit(s)

This internship course provides on-the-job learning experiences in the medical receptionist field. Students earn college credit while working under the supervision of a healthcare professional. Internship sites are selected to support each student's career goals, contributing to the student's education and future employability.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience
2. Describe their work experience in their career field and growth in knowledge of the career field
3. Demonstrate and explain advanced skills and knowledge gained at the workplace
4. Demonstrate foundational job search and workplace competencies
5. Describe understanding of workplace culture
6. Demonstrate college core learning outcomes in communication and use of technology

COOP 280PB - Co-op Ed: Phlebotomy

3-12 Credit(s)

This internship course provides on-the-job learning experiences in the phlebotomy field. Students earn college credit while working under the supervision of a healthcare professional. Internship sites are selected to support each student's career goals, contributing to the student's education and future employability.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience
2. Describe their work experience in their career field and growth in knowledge of the career field
3. Demonstrate and explain advanced skills and knowledge gained at the workplace
4. Demonstrate foundational job search and workplace competencies
5. Describe understanding of workplace culture
6. Demonstrate college core learning outcomes in communication and use of technology

COOP 280RX - Co-op Ed: Pharmacy Tech

3-12 Credit(s)

This internship course provides on-the-job learning experiences in the pharmacy tech field. Students earn college credit while working under the supervision of a healthcare professional. Internship sites are selected to support each student's career goals, contributing to the student's education and future employability.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience.
2. Describe their work experience in their career field and growth in knowledge of the career field
3. Demonstrate and explain advanced skills and knowledge gained at the workplace
4. Demonstrate foundational job search and workplace competencies
5. Describe understanding of workplace culture
6. Demonstrate college core learning outcomes in communication and use of technology

COOP 280SL - Co-op Ed: Service Learning

1-3 Credit(s)

Gain service-related experience to address community needs in by volunteering either on-campus or with community partners. Students will practice critical thinking, citizenship and civic responsibility, develop skills, explore career options, and network with professionals while earning college credit. Students set learning objectives and engage in faculty-led guided reflection activities. Please contact the Service Learning cooperative education coordinator before attempting to register.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Articulate an in-depth understanding of current community issues and needs
2. Apply academic learning in real world situations
3. Demonstrate enhanced collaboration, critical thinking and problem solving abilities

4. Demonstrate a sense of civic engagement and social responsibility

5. Demonstrate college core learning outcomes in communication and use of technology

COOP 280 H - Co-op Ed: Service Learning-Honors

3-12 Credit(s)

This honors class delves deeper into course topics and requires a high level of student motivation; the pace may be faster than non-honors courses. See www.lanec.edu/honors for information. Gain experience with community partners in addressing real community needs. Practice critical thinking, citizenship and civic responsibility, explore career options, and network with professionals while earning college credit. In this Honors section students will actively engage, investigate and reflect on topics leading to enhanced knowledge and skills.

Prerequisite: Instructor approval. WR 121-readiness recommended.

Learning Outcomes

Upon successful completion of this course, students should be able to:

1. Articulate their understanding of social issues and responsibilities, multiculturalism, organizational culture, leadership styles, and sustainability.
2. Observe, investigate, document and reflect upon social issues and responsibilities, multiculturalism, organizational culture, leadership styles and sustainability in a community setting.
3. Demonstrate foundational workplace competencies such as reliability, responsibility, following instructions, team-work, communication skills and taking appropriate initiative.
4. Articulate careers and employment related to social service.

CS 206 - Co-op Ed: Computer Information Technology Seminar

2 Credit(s)

Students will increase their understanding of industry expectations as well as job search tools and skills. Course is designed to help students present themselves to employers in a competent and professional manner, and to move initially into their cooperative education internships, and then, their professional careers.

Prerequisite: CIS 100

Learning Outcomes

Upon successful completion of 206 seminars, the student should be able to:

1. Communicate both orally and in writing using proper and current business etiquette, format and content. Students will demonstrate competent skills in the following areas: emailing, letter writing, resume writing, job application preparation, reference sheet preparation and interviewing skills
2. Develop foundation workplace competencies and workplace culture. Students will be able to describe and demonstrate proper business office etiquette, appropriate interview attire, and business meeting behavior
3. Think critically related to job search and on-the-job performance practices and topics. Students will be able to: clarify and check assumptions; apply skills and knowledge to real world practices through action and decision especially when rapid judgment is called for; demonstrate independent judgment; and be able to explain alternative interpretations and perspectives

CS 280CN - Co-op Ed: Computer Network Operations

3-12 Credit(s)

This internship course offers a work experience that integrates theory and practice in the field of computer networking. It provides opportunities to develop skills, explore career options and network with professionals and employers while earning academic credit toward the degree.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience.
2. Describe their work experience in their career field and growth in knowledge of the career field.
3. Demonstrate and explain advanced skills and knowledge gained at the workplace.
4. Demonstrate foundational job search and workplace competencies.
5. Describe understanding of workplace culture.
6. Demonstrate college core learning outcomes in communication and use of technology.

CS 280GD - Co-op Ed: Computer Simulation and Game Development

3-12 Credit(s)

This internship course offers a work experience that integrates theory and practice in the field of computer simulation and game development. It provides opportunities to develop skills, explore career options and network with professionals and employers while earning academic credit toward the degree.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience.
2. Describe their work experience in their career field and growth in knowledge of the career field.
3. Demonstrate and explain advanced skills and knowledge gained at the workplace.
4. Demonstrate foundational job search and workplace competencies.
5. Describe understanding of workplace culture.
6. Demonstrate college core learning outcomes in communication and use of technology.

CS 280IS - Co-op Ed: Computer Information Systems

3-12 Credit(s)

This internship course offers a work experience that integrates theory and practice in the field of computer information systems. It provides opportunities to develop skills, explore career options and network with professionals and employers while earning academic credit toward the degree.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Integrate classroom learning with field experience
2. Describe their work experience in their career field and growth in knowledge of the career field
3. Demonstrate and explain advanced skills and knowledge gained at the workplace
4. Demonstrate foundational job search and workplace competencies
5. Describe understanding of workplace culture
6. Demonstrate college core learning outcomes in communication and use of technology

CS 280PR - Co-op Ed: Computer Programming

3-12 Credit(s)

This internship course offers a work experience that integrates theory and practice in the field of computer programming. It provides opportunities to develop skills, explore career options and network with professionals and employers while earning academic credit toward the degree.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience.
2. Describe their work experience in their career field and growth in knowledge of the career field.
3. Demonstrate and explain advanced skills and knowledge gained at the workplace
4. Demonstrate foundational job search and workplace competencies.
5. Describe understanding of workplace culture.
6. Demonstrate college core learning outcomes in communication and use of technology.

CST 280 - Co-op Ed: Construction

3-12 Credit(s)

This course provides construction-related learning in businesses and organizations. The student will have the opportunity to integrate theory and practice gained in the classroom with practical experience in the professional world. In this course a student will develop skills, explore career options and network with professionals and employers while earning credit toward a degree.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience
2. Describe their work experience in their career field and growth in knowledge of the career field
3. Demonstrate and explain advanced skills and knowledge gained at the workplace
4. Demonstrate foundational job search and workplace competencies
5. Describe understanding of workplace culture.
6. Demonstrate college core learning outcomes in communication and use of tech

DA 206 - Co-op Ed: Dental Assisting Seminar

1 Credit(s)

Must be enrolled in the Dental Assisting program. Students will increase their understanding of industry expectations while developing job search tools and skills. Students will learn and practice presenting themselves to employers in a

competent and professional manner in preparation for a professional career in dental assisting.

Corequisite: Must be enrolled with DA 280

Learning Outcomes

Upon completion of this course, students will be able to:

1. Demonstrate an understanding of workplace culture including required dress, conversations, and attitudes
2. Compose in writing a useful resume, cover letter and thank you letter
3. Participate in a "mock interview" process to gain interviewing skills
4. Demonstrate the ability to analyze new situations and respond according to professionally accepted guidelines
5. Identify factors which control and contribute to success in the workplace of the dental assistant
6. Demonstrate an understanding of effective, professional interactions, including what constitutes harassment and unethical behavior
7. Actively and constructively participate in classroom discussions

DA 280 - Co-op Ed: Dental Assisting

6-12 Credit(s)

Must be enrolled in the Dental Assisting Program. This course provides dental assisting work experience in community businesses. Includes opportunity to integrate theory and practice. Students can develop skills & explore career options.

Corequisite: Course must be co-enrolled with DA 206

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate academic theory with workplace practice.
2. Demonstrate a clear understanding of the responsibilities and procedures performed by each member of the dental health team.
3. Compose in writing a useful resume, cover letter and thank you letter.
4. Participate in a "mock interview" process to gain interviewing skills.
5. Demonstrate the ability to analyze new situations and respond according to professionally accepted guidelines – criterion included in the co-op packet evals.
6. Actively and constructively participate in classroom discussions.
7. Demonstrate ability to work successfully in the dental office with the patient and the dental team. A criterion is defined in the co-op packet evals.
8. Demonstrate the chairside and laboratory skills necessary to function as a member of the dental health team in two different dental offices.
9. Demonstrate ability to manipulate new dental materials while maintaining efficiency
10. Demonstrate an understanding of workplace culture including required dress, conversations, and attitudes.
11. Develop a professional network.
12. Perform at a level of "marginal" or better on all evaluations, showing improvement in at least three areas in your second session evaluations– criterion included in Co-op packet evals.
13. Demonstrate and strengthen the interpersonal skills necessary to blend into two different dental office assignments, and the clinic at LCC.
14. Identify factors which control and contribute to success in the workplace of the dental assistant.
15. Show personal, professional and academic integrity while working as a Cooperative Education student.

DH 280 - Co-op Ed: Dental Hygiene

3-12 Credit(s)

This course provides the student with dental hygiene work experience in community businesses and organizations. The student will have the opportunity to integrate theory and practice gained in the classroom with practical experience in the professional world.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience.
2. Describe their work experience in their career field and growth in knowledge of the career field.
3. Demonstrate and explain advanced skills and knowledge gained at the workplace.
4. Demonstrate foundational job search and workplace competencies.
5. Describe understanding of workplace culture.
6. Demonstrate college core learning outcomes in communication and use of technology.

DS 280 - Co-op Ed: Diesel

3-12 Credit(s)

This course provides diesel-related learning in businesses and organizations. The student will have the opportunity to integrate theory and practice gained in the classroom with practical experience in the professional world. In this course a student will develop skills, explore career options and network with professionals and employers while earning credit toward a degree.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience.
2. Describe their work experience in their career field and growth in knowledge of the career field.
3. Demonstrate and explain advanced skills and knowledge gained at the workplace.
4. Demonstrate foundational job search and workplace competencies.
5. Describe understanding of workplace culture.
6. Demonstrate college core learning outcomes in communication and use of technology.

ED 280 - Co-op Ed: Education

3-12 Credit(s)

Work as an intern in an elementary, middle, or high school classroom to explore teaching as a career. Put up bulletin boards, grade papers, prepare art projects, tutor one-on-one and work with small groups. Course may be repeated to work with different age groups in different schools.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Learn to organize a classroom environment.
2. Design curriculum.
3. Interact with parents, teachers, and staff, and to teach.
4. Become more confident and more skilled with each practicum you complete.
5. Connect with teachers and principals.
6. Build a network of support for your future career.

ED 280EC - Co-op Ed: Early Childhood Education

1-7 Credit(s)

This course offers ECE majors (seeking an AAS degree) internship opportunities in a variety of early childhood settings. ECE majors earn college credit and a grade for on the job work experience related to their education and career goals. The field experience is supervised by ECE faculty and qualified staff at the site, and may include a weekly seminar.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience.
2. Gain work experience in the student's career field.
3. Be exposed to advanced skills and knowledge.
4. Develop foundation workplace competencies.
5. Be exposed to job opportunities and potentials; clarify and confirm career goals.
6. Increase understanding of workplace culture.

EMS 280P1 - Co-op Ed: Paramedic Internship P1

3-12 Credit(s)

First term of a two-term course where paramedic students continue their learning by interning on an advance life support ambulance that responds to 911 emergencies. Students are paired with highly skilled local paramedics for their learning experience.

Prerequisite: EMS 262 with grade of C- or better; P/NP not accepted. Must be enrolled in one of the following Majors: Paramedicine

Learning Outcomes

Upon completion of this course, the successful student will be able to:

1. Understand and demonstrate professional appearance
2. Understand the importance of accepting constructive feedback
3. Understand and demonstrate proper attitude toward EMS work
4. Demonstrate knowledge of agency policies and procedures
5. Demonstrate knowledge of State/County EMS rules and regulations, CME requirements
6. Demonstrate knowledge of basic life support protocols
7. Demonstrate knowledge of advanced life support protocols
8. Demonstrate proper equipment use.
9. Demonstrate proper response to calls
10. Demonstrate accuracy & completeness in routine forms

11. Demonstrate proper EMS run report writing: organization & completeness
12. Demonstrate proper EMS run reports: grammar, spelling, legibility
13. Demonstrate proper EMS run reports: completed in timely manner
14. Demonstrate proper HEAR system reports
15. Demonstrate proper scene management: normal conditions
16. Demonstrate proper scene management: stressful conditions
17. Obtain appropriate patient history
18. Perform complete physical examinations
19. Demonstrate the ability to determine a differential diagnosis appropriate to history & physical exam
20. Demonstrate problem solving and decision making

EMS 280P2 - Co-op Ed: Paramedic Internship P2

5 to 12 Credit(s)

Second term of a two-term course. A continuation of EMS 280. Designed for students to complete required hours on an advance life support ambulance that responds to 911 emergencies. Students will manage a variety of ambulance calls while being shadowed by their paramedic preceptor. The student completes the course when all requirements have been met, including consistent competency in providing paramedic-level care within the 911 EMS system.

Prerequisite: EMS 280P1 with grade of C- or better; P/NP not accepted. Must be enrolled in one of the following Majors: Paramedicine

Learning Outcomes

Upon completion of this course, the successful student will be able to:

1. Understand and demonstrate professional appearance
2. Understand the importance of accepting constructive feedback
3. Understand and demonstrate proper attitude toward EMS work
4. Demonstrate knowledge of agency policies and procedures
5. Demonstrate knowledge of State/County EMS rules and regulations, CME requirements
6. Demonstrate knowledge of basic life support protocols
7. Demonstrate knowledge of advanced life support protocols
8. Demonstrate proper equipment use
9. Demonstrate proper response to calls
10. Demonstrate accuracy & completeness in routine forms
11. Demonstrate proper EMS run report writing: organization & completeness
12. Demonstrate proper EMS run reports: grammar, spelling, legibility
13. Demonstrate proper EMS run reports: completed in timely manner
14. Demonstrate proper HEAR system reports
15. Demonstrate proper scene management: normal conditions
16. Demonstrate proper scene management: stressful conditions
17. Obtain appropriate patient history
18. Perform complete physical examinations
19. Demonstrate the ability to determine a differential diagnosis appropriate to history & physical exam
20. Demonstrate problem solving and decision making

ENGR 280 - Co-op Ed: Engineering

3-12 Credit(s)

This internship course offers a work experience that integrates theory and practice in the field of engineering. It provides opportunities to develop skills, explore career options and network with professionals and employers while earning academic credit.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience
2. Describe their work experience in their career field and growth in knowledge of the career field
3. Demonstrate and explain advanced skills and knowledge gained at the workplace
4. Demonstrate foundational job search and workplace competencies
5. Describe understanding of workplace culture
6. Demonstrate college core learning outcomes in communication and use of technology

ENGR 280D - Co-op Ed: Drafting

3-12 Credit(s)

Gain on-the-job learning experience as a drafter in local business, industry and governmental sites. Develop skills, explore career options, and network with professionals and employers while earning college credit. Meet with the co-op coordinator the term before (if possible) to set up the internship.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience.
2. Describe their work experience in their career field and growth in knowledge of the career field.
3. Demonstrate and explain advanced skills and knowledge gained at the workplace.
4. Demonstrate foundational job search and workplace competencies.
5. Describe understanding of workplace culture.
6. Demonstrate college core learning outcomes in communication and use of technology.

ENGR 280M - Co-op Ed: Manufacturing Technology

3-12 Credit(s)

This course provides manufacturing-related learning in businesses and organizations. The student will have the opportunity to integrate theory and practice gained in the classroom with practical experience in the professional world. In this course a student will develop skills, explore career options and network with professionals and employers while earning credit toward a degree.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience.
2. Describe their work experience in their career field and growth in knowledge of the career field.
3. Demonstrate and explain advanced skills and knowledge gained at the workplace.
4. Demonstrate foundational job search and workplace competencies.
5. Describe understanding of workplace culture.
6. Demonstrate college core learning outcomes in communication and use of technology.

ENGR 280W - Co-op Ed: Welding

3-12 Credit(s)

This course provides welding-related learning in businesses and organizations. The student will have the opportunity to integrate theory and practice gained in the classroom with practical experience in the professional world. In this course a student will develop skills, explore career options and network with professionals and employers while earning credit toward a degree.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience.
2. Describe their work experience in their career field and growth in knowledge of the career field.
3. Demonstrate and explain advanced skills and knowledge gained at the workplace.
4. Demonstrate foundational job search and workplace competencies.
5. Describe understanding of workplace culture.
6. Demonstrate college core learning outcomes in communication and use of technology.

FL 280IW - Co-op Ed: International Work Experience

1-12 Credit(s)

Prerequisite: Instructor approval. This is a structured program for international work experience through LCC and IE3 Global Internships. Living and working in another country, students gain career and intercultural skills essential in a global society. Application and other details are on the web at ie3global.org.

Prerequisite: Instructor approval

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience
2. Describe their work experience in their career field and growth in knowledge of the career field
3. Demonstrate and explain advanced skills and knowledge gained at the workplace
4. Demonstrate foundational job search and workplace competencies
5. Describe understanding of workplace culture
6. Demonstrate college core learning outcomes in communication and use of technology

G 280 - Co-op Ed: Geology

3-12 Credit(s)

This internship course offers a work experience that integrates theory and practice in the field of geology. It provides opportunities to develop skills, explore career options and network with professionals and employers while earning academic credit.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience
2. Describe their work experience in their career field and growth in knowledge of the career field
3. Demonstrate and explain advanced skills and knowledge gained at the workplace
4. Demonstrate foundational job search and workplace competencies
5. Describe understanding of workplace culture
6. Demonstrate college core learning outcomes in communication and use of technology

G 280ES - Co-op Ed: Environmental Science

3-12 Credit(s)

This internship course offers a work experience that integrates theory and practice in the field of environmental studies. It provides opportunities to develop skills, explore career options and network with professionals and employers while earning academic credit.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience
2. Describe their work experience in their career field and growth in knowledge of the career field
3. Demonstrate and explain advanced skills and knowledge gained at the workplace
4. Demonstrate foundational job search and workplace competencies
5. Describe understanding of workplace culture
6. Demonstrate college core learning outcomes in communication and use of technology

GIS 280 - Co-op Ed: Geographic Information Science

3-12 Credit(s)

Cooperative Education is a work experience opportunity for students that have completed two GIS classes and have instructor's approval.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience
2. Describe their work experience in their career field and growth in knowledge of the career field
3. Demonstrate and explain advanced skills and knowledge gained at the workplace
4. Demonstrate foundational job search and workplace competencies
5. Describe understanding of workplace culture
6. Demonstrate college core learning outcomes in communication and use of technology

GWE 180 - Co-op Ed: General Work Experience

1-12 Credit(s)

This course provides learning experiences in community businesses and organizations. Students develop employability skills, explore career options and network with professionals and employers while earning college credit.

Prerequisite: Instructor consent

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Describe the skills and abilities gained through their work experience.
2. Demonstrate foundational workplace competencies such as team work, reliability, responsibility, following instructions, taking initiative, and responding to supervision.
3. Describe understanding of career opportunities gained through work experience.
4. Demonstrate understanding of workplace culture through appropriate attire, behavior and communications

HE 280 - Co-op Ed: Health Occupations

3-12 Credit(s)

This internship course provides on-the-job learning experiences in the health occupations field. Students earn college credit while working under the supervision of a health care professional. Internship sites are selected to support each student's career goals, contributing to the student's education and future employability.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience
2. Describe their work experience in their career field and growth in knowledge of the career field
3. Demonstrate and explain advanced skills and knowledge gained at the workplace
4. Demonstrate foundational job search and workplace competencies
5. Describe understanding of workplace culture
6. Demonstrate college core learning outcomes in communication and use of technology

HIM 280 - Co-op Ed: Health Information Management

3 Credit(s)

This internship course offers a work experience that integrates theory and practice in the field of Health Information Management. It provides opportunities to develop skills, explore career options and network with professionals and employers while earning academic credit toward the AAS HIM degree.

Prerequisite: COOP 206 with a grade of C or better, admission to the Health Information Management (HIM) program, and instructor approval

Learning Outcomes

Students who successfully complete this course will be able to:

1. Apply critical and creative thinking, problem-solving, and effective inter-professional communication skills related to health information management
2. Apply principles of healthcare privacy, confidentiality, legal, ethical issues and data security. Apply quantitative and qualitative methodologies to process healthcare information
3. Demonstrate knowledge of dynamic healthcare delivery systems and regulatory environments
4. Demonstrate knowledge of healthcare billing, coding and reimbursement policies
5. Demonstrate knowledge of healthcare terminology and medical conditions
6. Evaluate, use, and integrate information technology to support medical decision making and processes
7. Demonstrate the application of information technology in the HIM environment
8. Demonstrate the principles of leadership and management in the HIM environment

HIT 280 - Co-op Ed: Health Records

3-12 Credit(s)

The purpose of this course is to provide students meaningful learning experiences related to the field of health records. This course allows students the opportunity to earn college credit while working in the health care community under supervision.

Prerequisite: COOP 206, admission to the Health Information Management (HIM) program, and instructor approval

Learning Outcomes

Students who successfully complete this course will be able to:

1. Demonstrate the ability to organize, input, process, analyze, secure, and distribute healthcare information
2. Demonstrate the organization, analysis, and evaluation of health record content for completeness and accuracy
3. Demonstrate knowledge of abstracting health records and assigning standardized codes to diagnoses and procedures to accurately meet reporting needs and processing claims for insurance reimbursement
4. Apply principles of healthcare privacy, confidentiality, legal, ethical issues, and data security including the release of information regulatory requirements
5. Demonstrate knowledge of healthcare terminology and medical conditions
6. Demonstrate knowledge of healthcare delivery systems and regulatory environments
7. Demonstrate knowledge of utilizing the library and valid internet resources for research, projects, and to maintain a level of expertise in his or her field of study
8. Apply critical and creative thinking, problem-solving, and effective inter-professional communication skills related to health information management

HS 280 - Cooperative Education: Human Services

1-12 Credit(s)

In this internship course students will gain human services-related work experience in community organizations. Students will integrate theory and practice, develop skills, explore career options, and network with professional while earning college credit. Please contact the Human Services cooperative education coordinator before attempting to register.

Prerequisite: HS 150 with a grade of C- or better.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience
2. Describe their work experience in their career field and growth in knowledge of the career field
3. Demonstrate and explain advanced skills and knowledge gained at the workplace
4. Demonstrate foundational job search and workplace competencies
5. Describe understanding of workplace culture
6. Demonstrate college core learning outcomes in communication and use of technology

HS 280AS - Cooperative Education: Human Services - Addiction Studies

1-12 Credit(s)

In this internship course, students will gain human services-related work experience in addiction-focused community organizations. Students will integrate theory and practice, develop skills, explore career options, and network with professionals while earning college credit. Please contact the Human Services cooperative education coordinator before attempting to register.

Prerequisite: HS 150

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience
2. Describe their work experience in their career field and growth in knowledge of the career field
3. Demonstrate and explain advanced skills and knowledge gained at the workplace
4. Demonstrate foundational job search and workplace competencies
5. Describe understanding of workplace culture
6. Demonstrate college core learning outcomes in communication and use of technology

IDS 280S - Co-op Ed: Sustainability Coordinator

3-12 Credit(s)

This internship course offers a work experience that integrates theory and practice in the field of sustainability. It provides opportunities to develop skills, explore career options and network with professionals and employers while earning academic credit toward the degree.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Integrate classroom learning with field experience
2. Describe their work experience in their career field and growth in knowledge of the career field
3. Demonstrate and explain advanced skills and knowledge gained at the workplace
4. Demonstrate foundational job search and workplace competencies
5. Describe understanding of workplace culture
6. Demonstrate college core learning outcomes in communication and use of technology

J 280 - Co-op Ed: Journalism

3-12 Credit(s)

This course provides work experience in journalistic writing and reporting, illustration and design, and photography and video. Students will have the opportunity to integrate classroom theory with practical experience. Students may develop skills, explore career options and network with professionals and employers while earning credit toward a degree. Contact the journalism co-op coordinator before registering. Contents and expected learning proficiencies of this course vary from term to term. May be repeated up to 9 total credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience

2. Describe their work experience in their career field and growth in knowledge of the career field
3. Demonstrate and explain advanced skills and knowledge gained at the workplace
4. Demonstrate foundational job search and workplace competencies
5. Describe understanding of workplace culture
6. Demonstrate college core learning outcomes in communication and use of technology

MA 206 - Co-op Ed: Medical Assistant Seminar

2 Credit(s)

Students will increase their understanding of the medical profession, learn effective resume writing, interviewing techniques and job search skills. Students will learn and practice presenting themselves professionally to employers in preparation for a cooperative education internship.

Prerequisite: Admission to the Medical Assistant program

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Communicate both orally and in writing using proper and current business etiquette, format and content. Students will demonstrate competent skills in the following areas: emailing, letter writing, resume writing, job application preparation, reference sheet preparation and interviewing skills
2. Develop foundation workplace competencies and workplace culture. Students will be able to describe and demonstrate proper business office etiquette, appropriate interview attire, and business meeting behavior
3. Think critically related to job search and on-the-job performance practices and topics. Students will be able to: clarify and check assumptions; apply skills and knowledge to real world practices through action and decision especially when rapid judgment is called for; demonstrate independent judgment; and be able to explain alternative interpretations and perspectives.

MA 280 - Co-op Ed: Medical Assistant

5-12 Credit(s)

In this required internship course students gain on-the-job work experience in local medical facilities in both clinical and administrative office settings. Students learn to identify and use additional medical equipment as well as have opportunities to integrate theory and practice introduced in the classroom with practical experiences in the professional field.

Prerequisite: Admission to the Medical Assistant program

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience
2. Describe their work experience in their career field and growth in knowledge of the career field
3. Demonstrate and explain advanced skills and knowledge gained at the workplace
4. Demonstrate foundational job search and workplace competencies
5. Describe understanding of workplace culture
6. Demonstrate college core learning outcomes in communication and use of technology

MDP 280 - Co-op Ed: Multimedia

3-12 Credit(s)

Co-op offers work experience in a professional multimedia-related business. Students integrate theory and practice gained in the classroom with practical experience in the professional world. Students develop skills, explore career options and network with professionals and employers while earning credit toward a degree. Contact the multimedia design co-op coordinator before registering. Course may be repeated.

Prerequisite: Instructor approval

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience
2. Describe their work experience in their career field and growth in knowledge of the career field
3. Demonstrate and explain advanced skills and knowledge gained at the workplace
4. Demonstrate foundational job search and workplace competencies
5. Describe understanding of workplace culture
6. Demonstrate college core learning outcomes in communication and use of technology

MTH 280 - Co-op Ed: Mathematics

3-12 Credit(s)

This internship course offers a work experience as a math tutor on a Lane campus or in an area K-12 school. Students devote a prearranged number of hours each week to classroom observation and possible assistance to the instructor, as well as direct student contact in a one-to-one or group situation.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience
2. Describe their work experience in their career field and growth in knowledge of the career field
3. Demonstrate and explain advanced skills and knowledge gained at the workplace
4. Demonstrate foundational job search and workplace competencies
5. Describe understanding of workplace culture
6. Demonstrate college core learning outcomes in communication and use of technology

MUL 280 - Co-op Ed: Web Design

3-12 Credit(s)

This course provides career-related work experience in professional web design sites and related-businesses and organizations. Students integrate theory and practice gained in the classroom with practical experience in the professional world. Students develop skills, explore career options and network with professionals and employers while earning credit toward a 1-year certificate. Contact the web design co-op coordinator before registering. Course may be repeated.

Prerequisite: Instructor approval

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Integrate classroom learning with field experience
2. Describe their work experience in their career field and growth in knowledge of the career field
3. Demonstrate and explain advanced skills and knowledge gained at the workplace
4. Demonstrate foundational job search and workplace competencies
5. Describe understanding of workplace culture
6. Demonstrate college core learning outcomes in communication and use of technology

MUL 280GD - Co-op Ed: Graphic Design

3-12 Credit(s)

This course provides on-the-job experience in professional graphic design sites in the community. Students integrate theory and practice gained in the classroom with practical experience in the professional world. Students develop skills, explore career options and network with professionals and employers while earning credit toward a degree. Contact the graphic design co-op coordinator before registering. Course content and expected learning proficiencies vary term to term. Course may be repeated.

Prerequisite: Instructor approval

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience
2. Describe their work experience in their career field and growth in knowledge of the career field
3. Demonstrate and explain advanced skills and knowledge gained at the workplace
4. Demonstrate foundational job search and workplace competencies
5. Describe understanding of workplace culture
6. Demonstrate college core learning outcomes in communication and use of technology

MUS 280 - Co-op Ed: Music

3-12 Credit(s)

Co-op offers students on-the-job work experience in a music-related site. Students integrate theory and practice gained in the classroom with practical experience in the professional world. Students develop skills, explore career options and network with professionals and employers while earning credit toward a degree. Contents and expected learning proficiencies of this course vary from term to term. Contact the music co-op coordinator before registering. May be repeated up to 12 total credits.

Prerequisite: Instructor approval

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience
2. Describe their work experience in their career field and growth in knowledge of the career field
3. Demonstrate and explain advanced skills and knowledge gained at the workplace
4. Demonstrate foundational job search and workplace competencies
5. Describe understanding of workplace culture
6. Demonstrate college core learning outcomes in communication and use of technology

NRG 280 - Co-op Ed: Energy Management

3-12 Credit(s)

This internship course offers a work experience that integrates theory and practice in the field of energy management. It provides opportunities to develop skills, explore career options and network with professionals and employers while earning academic credit toward the degree.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Integrate classroom learning with field experience
2. Describe their work experience in their career field and growth in knowledge of the career field
3. Demonstrate and explain advanced skills and knowledge gained at the workplace
4. Demonstrate foundational job search and workplace competencies
5. Describe understanding of workplace culture
6. Demonstrate college core learning outcomes in communication and use of technology

NRS 280 - Co-op Ed: Nursing

2-12 Credit(s)

This is a voluntary learning experience in a professional medical setting where students gain additional nursing skills under the guidance of working nursing professionals, explore career options, and integrate theory and practice. This course is not required for the Nursing Program AAS degree.

Prerequisite: Admission in Nursing Program.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience.
2. Describe their work experience in their career field and growth in knowledge of the career field.
3. Demonstrate and explain advanced skills and knowledge gained at the workplace.
4. Demonstrate foundational job search and workplace competencies.
5. Describe understanding of workplace culture.
6. Demonstrate college core learning outcomes in communication and use of technology.

OST 280 - Co-op Ed: Occupational Skills

1-12 Credit(s)

In this course students earn college credit for on-the-job work experience related to his or her educational and career goals. Students integrate theory and practice, develop skills, expand career knowledge and make contact for future employment. Twenty to 26 credits of co-op are required for the Occupational Skills certificate.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience.
2. Describe their work experience in their career field and growth in knowledge of the career field.
3. Demonstrate and explain advanced skills and knowledge gained at the workplace.
4. Demonstrate foundational job search and workplace competencies.
5. Describe understanding of workplace culture.
6. Demonstrate college core learning outcomes in communication and use of technology.

PE 280C - Co-op Ed: Coaching

3-12 Credit(s)

Supervised internship in a coaching site off campus. Students will gain knowledge, develop skills, get coaching experience and explore career options while earning

credit toward a degree or certificate. Journals and other written assignments required.

Prerequisite: Instructor approval for site and credit load.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience
2. Describe their work experience in their career field and growth in knowledge of the career field
3. Demonstrate and explain advanced skills and knowledge gained at the workplace
4. Demonstrate foundational job search and workplace competencies.
5. Describe understanding of workplace culture.
6. Demonstrate college core learning outcomes in communication and use of technology.

PE 280F - Co-op Ed: Fitness

1-12 Credit(s)

Supervised and structured work experience in the professional fitness industry. Students will integrate classroom learning with field experience by demonstrating skills in real world applications. Students will have the opportunity to expand their knowledge, explore career options and network with potential employers.

Prerequisite: Admission into the Fitness & Lifestyle Specialist program.

Instructor approval for site and credit load.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience.
2. Describe their work experience in their career field and growth in knowledge of the career field.
3. Demonstrate and explain advanced skills and knowledge gained at the workplace.
4. Demonstrate foundational job search and workplace competencies.
5. Describe understanding of workplace culture.
6. Demonstrate college core learning outcomes in communication and use of technology.

PS 280 - Co-op Ed: Political Science

2-12 Credit(s)

Intern with governmental and political professionals. Work on political campaigns, assist federal/state/local legislators or work with grass roots organizations. Enhance your academic and career resumes, develop workplace skills and earn academic credit. No prior experience required; a one term commitment is required, but course can be repeated.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience.
2. Describe their work experience in their career field and growth in knowledge of the career field.
3. Demonstrate and explain advanced skills and knowledge gained at the workplace.
4. Demonstrate foundational job search and workplace competencies.
5. Describe understanding of workplace culture.
6. Demonstrate college core learning outcomes in communication and use of technology.

PS 280LW - Co-op Ed: Pre Law

2-12 Credit(s)

This internship is for students anticipating a legal career. Learn and work with lawyers, legal assistants and other legal professionals in areas of legal administration, research, working with clients and the courts. A one term commitment is required, but course can be repeated.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience.
2. Describe their work experience in their career field and growth in knowledge of the career field.
3. Demonstrate and explain advanced skills and knowledge gained at the workplace.
4. Demonstrate foundational job search and workplace competencies.
5. Describe understanding of workplace culture.
6. Demonstrate college core learning outcomes in communication and use of technology.

PSY 280 - Co-op Ed: Psychology

3-12 Credit(s)

In this internship course students will gain psychology-related work experience in community organizations. Students will integrate theory and practice, develop skills, explore career options, and network with professional while earning college credit. Please contact the Psychology cooperative education coordinator before attempting to register.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience.
2. Describe their work experience in their career field and growth in knowledge of the career field.
3. Demonstrate and explain advanced skills and knowledge gained at the workplace.
4. Demonstrate foundational job search and workplace competencies.
5. Describe understanding of workplace culture.
6. Demonstrate college core learning outcomes in communication and use of technology.

PTA 206 - Physical Therapist Assistant Seminar

2 Credit(s)

Students will increase their understanding of physical therapy workplace behaviors and expectations while reflecting on prior experiences and attitudes. Students will learn and practice presenting themselves in a competent and professional manner, self-assess utilizing the clinical performance instrument, and complete pre-clinical requirements in preparation for cooperative education internships and, ultimately, a healthcare career.

Prerequisite: PTA 103 and PTA 132 with a letter grade of C or better.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Identify and define key issues and related program, division, college, workplace, state, and federal policies related to physical therapy practice
2. Communicate effectively with all stakeholders in the physical therapy clinical environment using proper and current workplace etiquette, format, and content, modifying approach to meet the needs of the diverse audience
3. Evaluate/self-assess one's own skills, abilities, and attitudes related to the physical therapy career field, reflecting on prior work history, successes, failures, and obstacles throughout the process
4. Think critically about workplace performance practices and expectations and their impact on others
5. Apply learned skills in preparation for internship and employment in the physical therapy career field

PTA 280A - Co-op Ed: Physical Therapist Assistant - First Clinical Experience

4-8 Credit(s)

Second year PTA students apply PT interventions under PT/PTA supervision at a contracted clinical site. Students progress toward advanced beginner and intermediate PTA practice by demonstrating communication and critical thinking for the workplace. This is the first of three off-campus clinical learning experiences.

Prerequisite/Corequisite: PTA 104 and (PTA 104L or PTA 104LR) and PTA 133 and (PTA 133L or PTA 133LR) with a grade of C.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Safety. Recognize and maintain a safe work environment through knowledge of safety policies and procedures for patient, self, and others. (Approaching Intermediate Level Performance on the final CPI.)
2. Clinical Behavior (CAPTE 7D7). Demonstrate workplace and value-based behaviors during the clinical experience by arriving prepared and on time, wearing proper attire, maintaining patient confidentiality and dignity, and accepting feedback from supervisor(s) without defensiveness. (Approaching Intermediate Level Performance on the final CPI.)
3. Accountability. Observe established legal, professional, and ethical standards of the school, clinical site, and PT profession. (Approaching Intermediate Level Performance on the final CPI.)
4. Cultural Competence (CAPTE 7D8). Recognize and take into consideration patients' differences, values, preferences, and needs during all aspects of care. (Approaching Intermediate Level Performance on the final CPI.)
5. Communication. Practice effective communication strategies (verbal, non-verbal, and written), including active listening, with all parties in the healthcare

environment. (Approaching Intermediate Level Performance on the final CPI.)

6. Self-Assessment and Life-Long Learning. Acknowledge and seek opportunities to self-assess and improved knowledge, skills, and abilities for personal and career growth. (Approaching Intermediate Level Performance on the final CPI.)

7. Clinical Problem Solving. Demonstrate sound rationale through clinical problem-solving seeking guidance and clarification, as appropriate. (Approaching Intermediate Level Performance on the final CPI.)

8. Interventions: Therapeutic Exercise. Select, instruct, and modify appropriate exercises interventions and body mechanics training, including associated data collection, within the plan of care. (Approaching Advanced Beginner Level Performance on the final CPI.)

9. Interventions: Therapeutic Techniques. Select, apply, and modify appropriate manual therapy, airway clearance/breathing, and integumentary repair and protection techniques, including associated data collection, within the plan of care. (Approaching Advanced Beginner Level Performance on the final CPI.)

10. Interventions: Physical Agents and Mechanical Modalities. Select, apply, and modify appropriate thermal agents and mechanical modalities, including associated data collection, within the plan of care. (Approaching Advanced Beginner Level Performance on the final CPI.)

11. Interventions: Electrotherapeutic Modalities. Select, apply, and modify appropriate electrotherapeutic modalities, including associated data collection, within the plan of care. (Approaching Advanced Beginner Level Performance on the final CPI.)

12. Interventions: Functional Training and Equipment. Select, apply, and modify/adjust appropriate functional training techniques and equipment devices, including associated data collection, within the plan of care. (Approaching Advanced Beginner Level Performance on the final CPI.)

13. Documentation. Document all aspects of patient care accurately and efficiently in no more than double the time of the clinical instructor in the preferred documentation format of the site. (Approaching Advanced Beginner Level Performance on the final CPI.)

14. Resource Management. Participate in effective and efficient delivery of physical therapy services through appropriate resource management. (Approaching Advanced Beginner Level Performance on the final CPI.)

PTA 280B - Co-op Ed: Physical Therapist Assistant - Second Clinical Experience

4-8 Credit(s)

Second year PTA students apply PT interventions under PT/PTA supervision at a contracted clinical site. Students progress toward intermediate and advanced intermediate PTA practice by demonstrating communication and critical thinking for the workplace. This is the second of three off-campus clinical learning experiences.

Prerequisite: PTA 280A

Learning Outcomes

Students who successfully complete this course will be able to:

1. Safety. Prepare and maintain a safe work environment through demonstration of safety policies and procedures for patient, self, and others. (Approaching Advanced Intermediate Level Performance on the final CPI.)
2. Clinical Behavior. Model workplace and value-based behaviors by arriving prepared and on time, wearing proper attire, maintaining patient confidentiality and dignity, seeking and accepting feedback from supervisor(s) without defensiveness and modifying behavior for the situation. (Approaching Advanced Intermediate Level Performance on the final CPI.)
3. Accountability. Maintain established legal, professional, and ethical standards of the school, clinical site, and PT profession. (Approaching Advanced Intermediate Level Performance on the final CPI.)
4. Cultural Competence. Recognize and adjust to patients' differences, values, preferences, and needs during all aspects of care. (Approaching Advanced Intermediate Level Performance on the final CPI.)
5. Communication. Demonstrate effective communication strategies (verbal, non-verbal, and written), including active listening, with all parties in the healthcare environment, adjusting to situational needs. (Approaching Advanced Intermediate Level Performance on the final CPI.)
6. Self-Assessment and Life-Long Learning. Seek opportunities to self-assess and improved knowledge, skills, and abilities for personal and career growth. (Approaching Advanced Intermediate Level Performance on the final CPI.)
7. Clinical Problem Solving. Develop an organized system for clinical problem-solving seeking guidance and clarification only as needed. (Approaching Advanced

Intermediate Level Performance on the final CPI.)

8. Interventions: Therapeutic Exercise. Demonstrate and adapt patient treatment in an organized manner utilizing appropriate exercises interventions and body mechanics training, including associated data collection, within the plan of care. (Approaching Intermediate Level Performance on the final CPI.)
9. Interventions: Therapeutic Techniques. Demonstrate and adapt patient treatment in an organized manner utilizing appropriate manual therapy, airway clearance/breathing, and integumentary repair and protection techniques, including associated data collection, within the plan of care. (Approaching Intermediate Level Performance on the final CPI.)
10. Interventions: Physical Agents and Mechanical Modalities (CAPTE 7D23-24). Demonstrate and adapt patient treatment in an organized manner utilizing appropriate thermal agents and mechanical modalities, including associated data collection, within the plan of care. (Approaching Intermediate Level Performance on the final CPI.)
11. Interventions: Electrotherapeutic Modalities. Demonstrate and adapt patient treatment in an organized manner utilizing appropriate electrotherapeutic modalities, including associated data collection, within the plan of care. (Approaching Intermediate Level Performance on the final CPI.)
12. Interventions: Functional Training and Equipment. Demonstrate and adapt patient treatment in an organized manner utilizing appropriate functional training techniques and equipment devices, including associated data collection, within the plan of care. (Approaching Intermediate Level Performance on the final CPI.)
13. Documentation. Document all aspects of patient care accurately and efficiently with limited corrections in no more than time and a half the time of the clinical instructor in the preferred documentation format of the site. (Approaching Intermediate Level Performance on the final CPI.)
14. Resource Management. Coordinate effective and efficient delivery of physical therapy services through appropriate resource management. (Approaching Intermediate Level Performance on the final CPI.)

PTA 280C - Co-op Ed: Physical Therapist Assistant - Third Clinical Experience

4-8 Credit(s)

Second year PTA students apply PT interventions under PT/PTA supervision at a contracted clinical site. Students progress toward entry-level PTA practice by demonstrating communication and critical thinking for the workplace. This is the third and final of three off-campus clinical learning experiences.

Prerequisite: PTA 280B

Learning Outcomes

Students who successfully complete this course will be able to:

1. Safety. Establish and promote a safe work environment through knowledge and development of safety policies and procedures for patient, self, and others. (Entry Level Performance on the final CPI.)
2. Clinical Behavior. Value and promote a high level of workplace and value-based behaviors by arriving prepared and on time, wearing proper attire, maintaining patient confidentiality and dignity, seeking, offering and accepting feedback without defensiveness and modifying behavior for the situation (Entry Level Performance on the final CPI.)
3. Accountability. Act in accordance with values consistent with established legal, professional, and ethical standards of the school, clinical site, and PT profession. (Entry Level Performance on the final CPI.)
4. Cultural Competence. Recognize and adapt approach to patients' differences, values, preferences, and needs during all aspects of care. (Entry Level Performance on the final CPI.)
5. Communication. Develop effective communication strategies (verbal, non-verbal, and written), including active listening, with all parties in the healthcare environment, adapting to situational needs. (Entry Level Performance on the final CPI.)
6. Self-Assessment and Life-Long Learning. Weigh various opportunities to self-assess and improve knowledge, skills, and abilities for personal and career growth. (Entry Level Performance on the final CPI.)
7. Clinical Problem Solving (7D9-11,15,17-22,26). Produce sound rationale for all treatment choices through clinical problem-solving seeking with minimal guidance and clarification. (Entry Level Performance on the final CPI.)
8. Interventions: Therapeutic Exercise. Design complete and progressive patient treatment utilizing appropriate exercises interventions and body mechanics training, including associated data collection, within the plan of care. (Entry Level Performance on the final CPI.)
9. Interventions: Therapeutic Techniques. Design complete and progressive

patient treatment utilizing appropriate manual therapy, airway clearance/breathing, and integumentary repair and protection techniques, including associated data collection, within the plan of care. (Entry Level Performance on the final CPI.)

10. Interventions: Physical Agents and Mechanical Modalities. Design complete and progressive patient treatment utilizing appropriate thermal agents and mechanical modalities, including associated data collection, within the plan of care. (Entry Level Performance on the final CPI.)
11. Interventions: Electrotherapeutic Modalities. Design complete and progressive patient treatment utilizing appropriate electrotherapeutic modalities, including associated data collection, within the plan of care. (Entry Level Performance on the final CPI.)
12. Interventions: Functional Training and Equipment. Design complete and progressive patient treatment utilizing appropriate functional training techniques and equipment devices, including associated data collection, within the plan of care. (Entry Level Performance on the final CPI.)
13. Documentation. Independently document all aspects of patient care accurately and efficiently in approximately the same time of the clinical instructor in the preferred documentation format of the site. (Entry Level Performance on the final CPI.)
14. Resource Management. Organize delivery of physical therapy services through the most effective and efficient resource management. (Entry Level Performance on the final CPI.)

SOC 280 - Co-op Ed: Sociology

3-12 Credit(s)

In this internship course students will gain sociology-related work experience in community organizations. Students will integrate theory and practice, develop skills, explore career options, and network with professional while earning college credit. Please contact the Sociology cooperative education coordinator before attempting to register.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience.
2. Describe their work experience in their career field and growth in knowledge of the career field.
3. Demonstrate and explain advanced skills and knowledge gained at the workplace.
4. Demonstrate foundational job search and workplace competencies.
5. Describe understanding of workplace culture
6. Demonstrate college core learning outcomes in communication and use of technology.

TA 280 - Co-op Ed: Performing Arts

3-12 Credit(s)

Co-op offers students on-the-job work experience in a theatre-related site. Students integrate theory and practice gained in the classroom with practical experience in the professional world. Students develop skills, explore career options and network with professionals and employers while earning credit toward a degree. Please contact performing arts co-op coordinator before registering. Course may be repeated.

Prerequisite: Instructor approval

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience
2. Describe their work experience in their career field and growth in knowledge of the career field
3. Demonstrate and explain advanced skills and knowledge gained at the workplace
4. Demonstrate foundational job search and workplace competencies
5. Describe understanding of workplace culture
6. Demonstrate college core learning outcomes in communication and use of technology

WATR 280 - Co-op Ed: Water Conservation Technician

3-12 Credit(s)

This internship course offers work experience that integrates classroom theory with practical experience in the field of water conservation. It provides opportunities to develop skills, explore career options and network with professionals and employers while earning academic credit toward the degree.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Integrate classroom learning with field experience.

2. Describe their work experience in their career field and growth in knowledge of the career field.
3. Demonstrate and explain advanced skills and knowledge gained at the workplace.
4. Demonstrate foundational job search and workplace competencies.
5. Describe understanding of workplace culture.
6. Demonstrate college core learning outcomes in communication and use of technology.

Creative Writing

CRWR 240 - Creative Writing: Nonfiction

4 Credit(s)

This course is designed to introduce the genre of creative nonfiction. Students will learn the conventions and techniques of creative nonfiction through guided writing projects. Students will learn strategies for developing narrative, backstory, pacing, and characterization by reading the work of other students and published authors, whose work will serve as models. The reading assignments will include various modes of the genre, such as autobiography/memoir, personal essay, nature and/or science writing, and literary journalism. Students will produce, workshop, and present their own works of creative nonfiction in class.

Prerequisite: A passing grade of (C- or better) in WR 121 or waiver based on instructor's evaluation of student writing.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Identify and utilize the elements of a story scene
2. Comply with the boundaries of truth and creativity with in genre
3. Identify and apply scenes and summary, being able to distinguish between the two techniques
4. Work within a variety of non-fiction frameworks
5. Critique a variety of genres within creative nonfictions
6. Develop voice and style
7. Understand and apply theme, tone, symbol, motif, point of view, dialogue, and characterization
8. Revise, edit, and potentially polish works of nonfiction prose
9. Produce a portfolio of 3-4 original works of creative nonfiction
10. Have a working knowledge of representative authors from the genre

CRWR 241 - Creative Writing: Fiction

4 Credit(s)

This course is an introduction to the principles and practice of writing, editing, and publishing short fiction. Students will focus on such elements as character, conflict, plot, point of view, setting, theme, dialogue, and tone both through the study of exemplary short fiction and through creating their own short stories that might then be entered in contests or sent off for publication. Students can expect to write two to three stories as well as other exercises such as textual analysis and peer reviews. Workshop discussions may be used along with instructor feedback to guide revision and editing of student work.

Prerequisite: A passing grade of (C- or better) in WR 121 or waiver based on instructor's evaluation of student writing

Learning Outcomes

Students who successfully complete this course will be able to:

1. Write a short story in accordance with the requirements of a specific publisher, magazine, or short fiction contest
2. Judge the suitability of specific publishers, magazines, or short fiction contests as potential recipients of the student's creative writing
3. Distinguish between more helpful comments and less unhelpful comments provided them by reviewer of their short fiction
4. Provide appropriate feedback when asked to review unpublished drafts of short fiction written by their peers

CRWR 242 - Creative Writing: Poetry

4 Credit(s)

This course is a course in writing poetry. The course will help students: Learn the elements of poetry and read poems by well-known poets. Develop ability in poetic composition. Read and write poems effectively. Receive constructive criticism of their writing and learn to be balanced and confident in their critical evaluations of their peers and gain a better understanding of themselves and others as writers.

Prerequisite: A passing grade (C- or better) in WR 121 or waived based on instructor's evaluation of student writing

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Know how to write their own poetry, and have a portfolio of 5-10 revised, original poems
2. Know how to draft, read critically, and revise their poetry
3. Know how to recognize and utilize a variety of elements of poetry, including sound, rhythm, tone, and figures of speech
4. Have received critiques of their poetry from the instructor and their classmates
5. Learn to read effectively and to help edit the poetry of their classmates
6. Have been introduced to a wide variety of published poetry, including a variety of themes, forms, and styles
7. Learn to use and evaluate traditional and non-traditional forms

Criminal Justice

CJA 100 - Introduction to Criminal Justice

4 Credit(s)

An introductory overview of the U.S. criminal justice system through an examination of its historical origins and development, structure, processes, and functions. Examines law enforcement, the courts, and corrections as distinct but complimentary components of the system and places the system within the larger context of legal and social philosophy. Topics include an introduction to the concepts and primary theories of criminology, the U.S. Constitution, substantive and procedural criminal law, justice administration, juvenile justice, ethics, and issues of gender and cultural diversity. Explores educational and career opportunities.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Describe the organizational structure and general processes of the United States criminal justice system
2. Summarize the philosophical and legal principles that underpin, guide, and circumscribe the administration of justice in the United States
3. Interpret the development of criminal law and criminal justice institutions in the historical context of gender, ethnic, and race relations in the United States
4. Critically evaluate the goals and functional roles of law enforcement, the courts, and corrections as they apply to society and society's official response to crime
5. Explain the requirements for entrance into the most common criminal justice careers
6. Appropriately apply relevant informational resources to the study and practice of criminal justice

CJA 200 - Introduction to Criminology

4 Credit(s)

An introductory, interdisciplinary survey of the study of crime, criminal behavior, and the application of theory to crime prevention and offender treatment. Topics include the development of criminological thought; social and legal definitions and classifications of crime; social, cultural, psychological, biological, political, and economic theories of criminal behavior; the uses and limitations of empirical research methods to the study of crime; and the influence of criminological theory on public policy. Completion of WR 121 is strongly recommended.

Prerequisite: Completion of WR 121/WR 121_H is strongly recommended.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Describe the most influential philosophical and theoretical explanations of crime and delinquency
2. Explain how historical, political, and social forces influenced the development of criminological thought
3. Describe the major trends and patterns of crime in the United States and the primary methods used to measure and study crime and delinquency
4. Identify the demographics and social conditions associated with crime and delinquency
5. Assess the relevance and utility of specific criminological theories as applied to specific forms of crime and delinquency
6. Critically evaluate criminal justice policies based on a knowledge and understanding of the causes and correlates of crime and delinquency

CJA 201 - Juvenile Delinquency

3 Credit(s)

An exploration of the nature, extent, and causes of delinquency and youth crime in the United States. Examines the historical development and methods of delinquency research; introduces students to the most influential theoretical perspectives; and provides an overview and critical analysis of specific treatment strategies as well as public crime prevention and control policies. Topics include offender and victim typologies and the influence of socio-economic, demographic, and cultural factors on juvenile behavior.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Explain the definitional differences between the terms "delinquency" and "youth crime" in the context of prevention research and policy
2. Describe the nature and extent of delinquency and youth crime in the U.S.
3. Examine the relationship between various environmental, social, and cultural factors on juvenile behavior
4. Outline the concepts and principles of each of the most influential theories of delinquency and youth crime
5. Evaluate the efficacy of delinquency and youth crime prevention and control efforts in the United States and other nations

CJA 207 - Gender, Crime and Justice

4 Credit(s)

An examination of the influence of gender on crime, victimization, and criminal justice responses. Topics include gender-specific variation in rates and types of crime; disparity in official criminal justice responses to crime and victimization; societal reactions; the interconnected nature of gender, race, social class, crime and social control; and gender representation in the criminal justice professions.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Summarize the past and present status of women (as offenders, victims, and professionals) in the criminal justice system
2. Describe how gender diversity in the criminal justice field has evolved over time
3. Describe gender role stereotypes and their impact on male and female socialization
4. Differentiate between sex and gender
5. Analyze the impact of gender role socialization on behavioral outcomes
6. Evaluate the importance of reducing gender disparity in the criminal justice system

CJA 210 - Criminal Investigation 1

3 Credit(s)

An exploration of the history, practice, and profession of criminal investigations. Provides an overview of general and offense-specific investigative principles and methods with an emphasis on the identification, documentation, collection and preservation of physical, testimonial, and documentary evidence. Topics include crime scene management, investigation, and reconstruction; criminal identification and criminalistics techniques; initial and follow-up investigatory phases; roles of law enforcement and support personnel; inductive and deductive reasoning; interpretation and application of substantive law; covert operations; and constitutional constraints.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Discuss the central tenets that form the basis of criminal investigative work, including a comparison of preliminary and follow-up investigations, types of reasoning, steps and stages in the investigative process, and Locard's exchange principle
2. Compare the various types and sources of evidence and their relative value to the investigation and prosecution of crime
3. Identify the relevant scientific and technical resources that are available to the criminal investigator
4. Describe how constitutional safeguards impact investigative process and conduct
5. Demonstrate appropriate crime scene management techniques and practices including the identification, documentation, collection, and preservation of significant items of physical evidence
6. Identify the relevant techniques, tactics, and strategies that may be employed during the investigation of specific crimes

CJA 212 - Criminal Justice Documentation and Reporting

3 Credit(s)

An overview of criminal justice documentation with an emphasis on written documentation methods and products. It will provide students with the information and basic skills necessary to write accurate and effective reports, affidavits, memoranda, and other documents specific to criminal justice professions. Topics include legal requirements, criminal justice-specific writing conventions and terminology, and documentation and reporting strategies.

Prerequisite: WR 121 or WR 121_H or instructor consent.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Compare the most common forms of criminal justice documentation and reporting.
2. Summarize the legal requirements and considerations that govern criminal justice documentation methods and products.
3. Demonstrate the ability to observe and accurately describe people, places, and things, consistent with criminal justice practices and requirements.
4. Demonstrate the ability to assimilate and accurately report information from multiple sources in a clear and appropriately concise manner.

CJA 213 - Interviewing and Interrogation

3 Credit(s)

An examination of the investigative interview process, particularly as it applies to criminal inquiries and prosecutions. The course provides a comparative overview and critical analysis of the most commonly taught and widely used interviewing and interrogation techniques. Topics include the role of testimonial evidence; ethical and legal requirements and constraints; basic information-gathering strategies and practices; varied approaches for interviewing victims, witnesses, and suspects; the nature of psychological persuasion; and the interpretation of verbal and physical behavior.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Compare the purpose, techniques, and legal considerations of the investigative interview to those of the criminal interrogation
2. Identify the environmental factors that promote successful interviewing/interrogation
3. Explain the importance of resources, reports, information, and data gathering in preparation for an interview or interrogation
4. Describe the psychological dynamics associated with interviews and interrogations
5. Identify the legal requirements and limitations that govern the use of the criminal interrogation
6. Critically evaluate the various techniques and methods associated with investigative interviewing and interrogation

CJA 214 - Introduction to Forensic Science

4 Credit(s)

An introductory survey of science and its application to the law. Provides an overview of the primary forensic science disciplines and an examination of principals, theories and practices related to the collection and analysis of evidence. Topics include types of physical evidence; crime scene processing methods and procedures; crime laboratories; analytic methods; interpretation of analytical test results; and related case law. Lab included.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Describe proper, offense-specific crime scene processing and evidence collection and custody practices based on types of evidence
2. Describe appropriate analytic techniques and tests for various types and classes of physical evidence
3. Apply the scientific method to the analysis of evidence and crime scene reconstruction
4. Assess the strengths and weaknesses, usefulness and limitations of specific forensic science applications and methods
5. Analyze the development, scope, and limitations of fundamental scientific concepts, models, theories, and methods as they apply to the investigation of crime
6. Discuss the development and current status of case law regarding acceptable scientific methods and theories and the admission of evidence and expert testimony

CJA 220 - Introduction to Criminal Law

3 Credit(s)

An overview of substantive criminal law in the United States that comprises an examination of the historical development, philosophical principles, sources and nature of criminal law. Specific topics include the distinction between criminal and civil law; the classification of crimes; definitions and essential elements of key crimes and inchoate offenses; basic principles of and defenses to criminal liability, and the use of law as a social force.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Explain the historical development and philosophical underpinnings of criminal law in the United States

2. Explain the basic legal principles and concepts that provide the foundation for civil and criminal law in the United States
3. Describe the sources of contemporary U.S. criminal law
4. Identify the essential elements of any criminal statute
5. Accurately interpret the applicability of criminal statutes to specific fact patterns
6. Discuss the various classifications of crime and criminal defenses

CJA 222 - Criminal Law: Procedural Issues

3 Credit(s)

An overview of U.S. constitutional, statutory, and case law as it relates to the investigation of crime, processing of accused persons, and maintenance of order in American society. Topics include search and seizure, detention and arrest, use of force, self-incrimination, the right to counsel, rules of evidence, criminal court proceedings, and post-conviction remedies.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Describe the foundations of American constitutional government as it is related to the administration of criminal justice
2. Define the individual rights enumerated in the U.S. Constitution and relevant amendments
3. Explain the significance and practical implications of key civil rights legislation and case law to the administration of criminal justice
4. Explain the procedural requirements and due process considerations related to the investigation of crime, processing of accused persons, and maintenance of order in American society
5. Compose written briefs of court cases as a method of identifying and interpreting procedural requirements affecting the administration of criminal justice
6. Correctly apply the principles of procedural law to commonly encountered circumstances involving 1st, 4th, 5th, 6th, and 8th Amendment protections

Culinary Arts

CA 121 - Composition of Cake

2 Credit(s)

This course is designed to teach classical techniques of baking and decorating cake production. All components of making and decorating cakes will be covered. Students will also be introduced to working with specialty cake ingredients.

Prerequisite: Admissions into the program and completion of the summer safety and math orientation

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Develop an understanding of the historical, cultural, and social importance of Cake and its role in the study of baking and pastry
2. Develop an understanding of fundamental cake baking and decorating techniques and methods
3. Demonstrate fundamental cake baking and decorating techniques with some proficiency
4. Demonstrate an awareness of Oregon ingredients and products to support its organic and sustainable values
5. Have knowledge of traditional cake celebrated on holidays and special occasions
6. Have knowledge of local, skilled bakers and cake decorators to provide networking within the community

CA 122 - Artisan Breads

2 Credit(s)

This class is designed to introduce the theories of artisan style breads from theory and lecture to practical application. This will include topics such as; fermentation, the science of gluten development, and basic entremet construction.

Prerequisite: Admissions into the program and completion of the summer safety and math orientation

Learning Outcomes

Upon completion of this course, students will be able to:

1. Be competent in the safe and efficient use of the many types of standard equipment and tools used in today's food service industry, including utensils, pots and pans, stoves, mixers, ovens, etc.
2. Identify, describe and perform safe and sanitary work habits required in the food service industry
3. Define the terms and concepts used in the preparation of volume foods
4. Perform basic math functions, measure ingredients and portions, as well as convert recipes to higher and lower yields

5. Maintain and properly use the various cutting tools used in the preparation of foods, emphasizing proper safety techniques
6. Describe and perform the common bread techniques used in the industry
7. Prepare the basic poolish, sponge, levain, pâte fermentée, and soaker techniques
8. Explain and prepare the various stages of preferment
9. Understand the concepts, theory and practices of sustainability, including recycling and composting, as they relate to sustainable standards in a professional kitchen, and perform recycling and composting functions

CA 123 - International Baking and Pastry

2 Credit(s)

This course is designed to apply classical baking and pastry techniques from across the Globe to create authentic and traditional recipes, both sweet and savory. With guided, hands-on instruction, students will learn cooking and baking preparation styles used in different countries.

Prerequisite: Prerequisite: CPC/CAHM Majors only.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Develop an understanding of historical culinary traditions and symbolic food customs of a variety of countries and global regions, and their significant roles in the study of baking and pastry.
2. Develop fundamental baking, pastry, and cooking skills through the execution of authentic recipes and traditional cooking methods.
3. Develop the knowledge of current trends in our global culinary community and the evolution of traditional recipes to their current interpretations.
4. Encourage students' exploration of the roots of their personal nationalities, the cultural customs and traditions reflected in the cuisine, and handed-down family recipes.
5. Be competent in various international baking and pastry techniques.
6. Develop an understanding of a global region or country's uniqueness reflected in their various fruits, vegetables, herbs, spices, and culinary specialties.
7. Develop an "international taste palate" – understanding varieties of flavors and textures depending on a particular global region or specific country.
8. Work together as a team developing kitchen relations and creative culinary skills to execute a weekly menu of International flavors.

CA 124 - Seasonal Baking and Pastry 1

2 Credit(s)

Course may be repeated for credit for up to six credits. It is designed to apply classical baking and pastry techniques with the use of seasonal produce. Students will learn about local produce availability as well as Oregon's agricultural organic and sustainable values.

Prerequisite: COC/CAHRTM Majors only.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Demonstrate an understanding of fundamental baking and pastry techniques and methods.
2. Develop essential baking and pastry skills with some proficiency.
3. Demonstrate an understanding of regional cuisine and the history and availability of local fruits and vegetables each season.
4. Demonstrate an awareness of Oregon agriculture and its organic and sustainable values.
5. Have knowledge of holidays and cultural traditions through seasonal recipes.
6. Have knowledge of sustainable cuisine practices of farms, markets, vendors and restaurants.

CA 125 - Seasonal Baking and Pastry 2

2 Credit(s)

This course, the second in the Seasonal Baking and Pastry series, is designed to continue developing students' classical baking and pastry techniques with the use of seasonal produce. Featuring products and produce primarily from the Lane County Farmers' Market, each class will showcase the edible labors of our local farmers. With guided and hands-on instruction, students will acquire the fundamentals of baking savory and sweet products with the season's fruits, vegetables, and herbs as well as prepare for the next season's offerings.

Prerequisite: CA 124

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Demonstrate an understanding of fundamental baking and pastry techniques and methods

2. Develop essential baking and pastry skills with some proficiency
3. Develop an understanding the core values of baking seasonally with fresh ingredients, along with supporting the local, agricultural community
4. Demonstrate an awareness of Oregon agriculture and its organic and sustainable values
5. Have knowledge of fundamental baking techniques as well as the current culinary trends
6. Have knowledge of sustainable cuisine practices of farms, markets, vendors and restaurants

CA 160 - Introduction to Cooking Theories 1

7 Credit(s)

This class will introduce students to tools and equipment, culinary history, terminology and culinary concepts. Focus is on basic culinary theory, introduction to cooking techniques and fundamentals, and practical application of safety and sanitation concepts.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Cite and apply local, state, and national health and food safety standards and employ HACCP principles
2. Identify and demonstrate safe and proper use of common kitchen tools and equipment
3. Identify and explain the various menu types, concepts, and uses
4. Apply and perform basic math functions, including applications to recipe format and use, conversion and costing
5. Describe properties, function, and uses of various ingredients
6. Utilize standard weights and measures, scaling and measurement techniques
7. Correctly perform fundamental cooking techniques

CA 162 - Introduction to Cooking Theories 2

7 Credit(s)

This class continues to build the culinary theory, techniques and principles introduced in CA 160, Cooking Theories 1. Focus is on further developing students culinary understanding and skills through meat fabrication

Prerequisite: CA 160

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. List, describe and demonstrate a variety of cooking techniques and principles associated with the proper cooking of meats, poultry, fish and seafoods.
2. Identify, explain and describe the preparation and uses of a variety of oils, herbs, spices, marinades and rubs used in food preparation.
3. Describe and demonstrate correct safety and sanitation principles and habits associated with food preparation.
4. Identify, explain and demonstrate appropriate math skills needed and used in performing recipe conversions, costings, requisitions, and yield tests.
5. Identify, describe and explain as well as perform basic meat fabrication skills on a variety of meats, fish/seafood and poultry items.
6. Identify, describe and explain as well as perform basic principles and processes of meat cooking techniques using a variety of meats, fish/seafood and poultry items.
7. Identify and explain appropriate techniques and principles that maximize retention of nutrients in food products.
8. Identify, describe and demonstrate a variety of sandwiches.
9. Identify, describe and demonstrate the techniques and principles used in Garde Manger food production including basic canapés and hors D'oeuvres, basic forcemeats, patés, terrines and sausages.

CA 163A - Beginning Baking and Pastry

3 Credit(s)

Students are introduced to the fundamentals of baking and pastry production, including food safety and sanitation and culinary math in relation to recipe comprehension, conversion and costing from the point of view of bakers percentages. Focus is on classical baking and pastry techniques.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Identify, explain, and perform basic commercial bakery techniques and production methods for a variety of baked goods
2. Explain and perform proper application of various bakery formulas and appropriate mixing techniques, including the sequence of adding ingredients

3. Identify, describe, and use a variety of bakery equipment, hand tools, and baking ware safely and with correct sanitation techniques
4. Identify, describe, and perform the proper use and handling of ingredients used in various baking processes and products
5. Demonstrate proper application and usage of weights and measurements as applied to a variety of dry and non-dry ingredients
6. Identify and describe the characteristics, functions, and interactions of major baking ingredients

CA 163B - Intermediate Baking and Pastry

2 Credit(s)

This course is a continuation of CA 163A. Students will continue to practice fundamentals of baking and pastry production, including food safety and sanitation and fundamental culinary math in relation to recipe comprehension, conversion and costing from the point of view of bakers' percentages.

Prerequisite: CA 163A

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Identify, explain, and perform intermediate commercial bakery techniques and production methods for a variety of baked goods
2. Explain and perform proper application of various bakery formulas and appropriate mixing techniques, including the sequence of adding ingredients
3. Identify, describe, and use a variety of bakery equipment, hand tools, and baking ware safely and with correct sanitation techniques
4. Identify, describe, and perform the proper use and handling of ingredients used in various baking processes and products
5. Demonstrate proper application and usage of weights and measurements as applied to a variety of dry and non-dry ingredients
6. Identify and describe the characteristics, functions, and interactions of major baking ingredients

CA 163C - Advanced Baking and Pastry

2 Credit(s)

This course is a continuation of CA 163B. Students will practice all fundamentals of baking and pastry skills learned in the entire course sequence, and expected of a working baker/pastry chef in the industry. This course will focus on specialty dessert techniques and ingredients.

Prerequisite: CA 163B.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Identify, explain, and perform advanced commercial bakery techniques and production methods for a variety of baked goods
2. Explain and perform proper application of various bakery formulas and appropriate mixing techniques, including the sequence of adding ingredients
3. Identify, describe, and use a variety of bakery equipment, hand tools, and baking ware safely and with correct sanitation techniques
4. Identify, describe, and perform the proper use and handling of ingredients used in various baking processes and products
5. Demonstrate proper application and usage of weights and measurements as applied to a variety of dry and non-dry ingredients
6. Identify and describe the characteristics, functions, and interactions of major baking ingredients

CA 294 - Advanced Cooking Theories 3

8 Credit(s)

Contemporary and advanced food preparation, emphasizing American regional cuisine. Students practice and serve traditional dishes from many American regional cultures to the public in the student-run dining room, rotating through restaurant and kitchen positions, developing, planning and serving an American regional-themed dinner menu.

Prerequisite: CA 162

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Have a greater understanding of the history, culture and key points in the development of American regional cuisine
2. Explain the influences of each region, with emphasis on local and native ingredients
3. Identify proper ways to prepare meat, including methods of cooking, cutting, trussing, carving and judging doneness, using regional American techniques
4. Correctly prepare fish and shellfish, using different cooking methods

5. Recognize proper ways to prepare vegetables, including methods of cooking, judging freshness, nutrient preservation, proper ways to cut vegetables, and using vegetables as a main dish
6. Identify the basics in preparing different salads, including preparing a variety of different kinds of salads
7. Demonstrate skill in preparing traditional American desserts
8. Recognize the importance of food presentation by making vegetable decorations and creative garnishes for all prepared dishes
9. Practice high standards of sanitation and demonstrate safety rules given in class
10. Practice different kinds of service by serving prepared food to other students and to the public
11. Develop a taste for fine food by eating and discussing the food prepared in class
12. Describe the differences in ethnic cooking techniques and their relationship with today's American cuisine

Dance

D 152 - Dance Basics

2 Credit(s)

This course introduces basic dance techniques and provides a strong foundation where students can proceed in their training in ballet, modern or jazz. The course presents alignment principles, weight shifts, level changes, and elements of movement such as: use of rhythm, shape and dynamics. Contents and expected learning proficiencies of this course vary from term to term. May be repeated up to 12 total credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. A basic understanding of dance creativity, technique and terminology
2. Increased knowledge of proper alignment and body mechanics
3. Ability to retain simple and basic movement phrases and to perform rhythmically
4. Improved strength, flexibility, and endurance in the field of dance
5. Ability to create simple movement phrases
6. Ability to improvise with simple structures

D 153 - Pilates Workout

2 Credit(s)

This course explores the Pilates Method of body conditioning, a unique system of stretching and strengthening exercises. Students gain strength, flexibility, and balance through specific exercises, which emphasize uniting the body and mind. Contents and expected learning proficiencies of this course vary from term to term. Class will focus on either mat work or barre. May be repeated up to 12 total credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Demonstrate and discuss efficient alignment
2. Demonstrate and discuss principles of core support and stability
3. Demonstrate and discuss Integration of transverse abdominus in mat exercises
4. Demonstrate and discuss principles and integration of breathing in mat exercises
5. Demonstrate and discuss Clear articulation and initiation of spinal movement
6. Demonstrate and discuss Clear articulation and initiation of iliofemoral joint
7. Demonstrate and discuss clear articulation and support of the shoulder girdle and scapulohumeral joint
8. Demonstrate and discuss working knowledge of Pilates mat exercises
9. Identify and correct inefficient movement patterns which cause undue stress on the body

D 160 - Dance Composition

3 Credit(s)

Composition techniques are learned and applied with specific emphasis on form, quality, spatial relationships, and rhythmic manipulation. This is a required course for dance majors. Students in this course may present their work in the annual production of The Works Student Dance Concert. Contents and expected learning proficiencies of this course vary from term to term. May be repeated up to 12 total credits.

Prerequisite: D 257

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Create a dance phrase or movement motif as thematic material for dance composition

2. Identify and demonstrate manipulative devices in creating variations of dance themes
3. Demonstrate improvisation skills
4. List and explain the elements of movement as an expressive form such as dynamics, shape, space, weight, stage-facings and directions

D 172 - Dancing the Fluid Body

2 Credit(s)

This course explores the concepts of Continuum Movement through specific breath and sound techniques, wave motion, and spiral movements varying from subtle micro-movements to dynamic full-bodied expression. Discussions of the body in relation to culture, anatomy, and ecology are springboards for movement explorations. Contents and expected learning proficiencies of this course vary from term to term. May be repeated up to 12 total credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Have knowledge of various breathing and sound techniques
2. Understand the value of exploring wave motion as it relates to strength, flexibility and vitality
3. Have techniques for tracking sensation, awareness, and emotion
4. Understand movement possibilities of fluid and connective tissue
5. Have knowledge of the scientific research related to Continuum Movement
6. Understand the value of micro-movements

D 176 - Fluid Yoga

2 Credit(s)

This course explores traditional yoga postures and practices with emphasis on breath and fluidity. Students develop a yoga practice that encourages creativity, exploration, and expression. Contents and expected learning proficiencies of this course vary from term to term. May be repeated up to 12 total credits.

Learning Outcomes

Upon successful completion of this course, student should be able to:

1. Have a basis for exploring Yoga philosophy and techniques related to dance
2. Have a deepened awareness of body-mind connection
3. Have knowledge of Yoga postures that support dance technique
4. Have knowledge of breathing techniques for performance preparation
5. Have knowledge of meditation techniques to support the creative process
6. Have an understanding of safe and effective Yoga practices

D 177 - Contemporary Dance 1

2 Credit(s)

For dancers with little or no previous dance experience, this beginning level class accommodates the pre-major and non-major student.

Learning Outcomes

Upon successful completion of this course, student should be able to:

1. Demonstrate and discuss an understanding of efficient alignment
2. Demonstrate and discuss mobility of the spine and head-tail connection in flexion, extension and rotation
3. Demonstrate and discuss articulation of hip-joints and feet
4. Demonstrate and discuss ability to release weight and to move actively into and out of the floor
5. Demonstrate and discuss placement and mobility of the shoulder girdle and arms
6. Demonstrate and discuss modern dance concepts: space, dynamics, rhythm and improvisation
7. Demonstrate and discuss ability to remember and perform simple dance phrases

D 178 - Contemporary Dance 2

2 Credit(s)

Modern dance technique is introduced with focus on three-dimensional use of the spine and torso, joint articulation and mobility, core strength, expressivity and spatial awareness. Given realistic progressive development, students will advance to Modern 2 after one term. Contents and expected learning proficiencies of this course vary from term to term. May be repeated up to 12 total credits.

Learning Outcomes

Upon successful completion of this course, student should be able to:

1. Efficient alignment
2. Articulation of hip-joint and feet
3. Placement and mobility of the scapula and arms in weight support and port de bra

4. Mobility of the spine and head-tail connection and ability to move in various spatial directions
5. Ability to remember and perform short movement phrases
6. Ability to release weight and to actively move body weight in and out of the floor
7. Demonstration of the center versus off-center movement and weight shifts
8. Explorations in modern dance concepts: space dynamics, rhythm, and improvisational structures

D 179 - Contemporary Dance 3

2 Credit(s)

This intermediate-advanced level class accommodates the dance-major and non-major student. Modern dance technique is presented with more complex movement phrases that incorporate three-dimensional use of the spine and torso, joint articulation and mobility, core strength, expressivity and spatial awareness. Students at this level are encouraged to explore their artistry and personal expressivity. Contents and expected learning proficiencies of this course vary from term to term. May be repeated up to 12 total credits.

Learning Outcomes

Upon successful completion of this course, student should be able to:

1. Efficient alignment in an increased dynamic range on and off center
2. Articulation of hip-joint and feet to communicate information to another
3. Placement and mobility of the scapula and arms in weight support and port de bra and ability to communicate information to another
4. Mobility of the spine and head-tail connection and ability to move in various spatial directions and ability to communicate to another
5. Ability to release weight and to actively move body weight in and out of the floor and ability to communicate to another
6. Explorations in modern dance concepts: space dynamics, rhythm, and improvisational structures

D 183 - Meditation in Motion

2 Credit(s)

This course explores awareness of movement, breath, and alignment from a variety of practices and modalities. Students develop ease, flexibility, and mental clarity while calming the nervous system and de-stressing. Contents and expected learning proficiencies of this course may vary from term-to-term. May be repeated up to 12 credits.

Learning Outcomes

Upon successful completion of this course, student should be able to:

1. Discuss, demonstrate, and identify developmental patterns
2. Demonstrate, identify proximal and distal initiation of movement
3. Discuss and identify bones and related features of skeletal system
4. Discuss, demonstrate body-mid centering principles
5. Utilize developmental patterns as analytical tools for movement. Demonstrate elements of re-patterning

D 184 - Hip Hop 1

2 Credit(s)

This introductory course explores Hip-Hop dance vocabulary and style. Students learn isolations, rhythmic patterns, and dance combinations. Students should be in good condition without chronic injuries. Contents and expected learning proficiencies of this course vary from term to term. May be repeated up to 12 total credits.

Learning Outcomes

Upon successful completion of this course, student should be able to:

1. Demonstrate beginning level in Hip-Hop, Jazz Dance, and Street Dance
2. Improved coordination and rhythmic movement skills
3. Improved strength, flexibility and endurance
4. Have the ability to retain simple movement phrases
5. Have an appreciation for the history of Hip-Hop
6. Have an understanding of proper alignment

D 185 - Ballet 1

2 Credit(s)

For dancers with little or no previous dance experience, this beginning level course accommodates the pre-major and non-major student. This course presents the fundamental principles and vocabulary of classical ballet with focus on correct body alignment and musicality. Given realistic progressive development, students repeat this level twice before advancing to Ballet 2. Contents and expected learning proficiencies of this course vary from term to term. May be repeated up to 12 total credits.

Learning Outcomes

Upon successful completion of this course, student should be able to:

1. Efficient alignment. Articulation of hip-joint and feet
2. Placement of arms in port de bra. Spinal integration in port corps
3. Ability to maintain core support during ballet barre exercises
4. Ability to correctly demonstrate plies, tendus, degages, petit battements, rond de jambs, developpes, fondus
5. Ability to do a pas de bouree
6. Name and perform exercise with technical ballet terms

D 186 - Ballet 2

2 Credit(s)

This intermediate level course accommodates the pre-major and non-major student. This course develops the student's alignment, coordination and musicality. Students are introduced to more challenging center floor phrases, adagios, petit allegros and grande allegros. Given realistic progressive development, students repeat this level three times before advancing to Ballet 3. Contents and expected learning proficiencies of this course vary from term to term. May be repeated up to 12 total credits.

Learning Outcomes

Upon successful completion of this course, student should be able to:

1. Demonstrate ballet technique and style
2. Demonstrate an appreciation and discipline in ballet dance
3. Demonstrate knowledge and maintenance of proper alignment and use of the body in motion
4. Demonstrate ability to retain simple movement sequences
5. Demonstrate improved strength, flexibility and endurance in the field of ballet

D 187 - Ballet 3

2 Credit(s)

This intermediate-advanced level class accommodates the dance major and non-major student. Focus is on technical execution, musicality, and line. Class work builds on the student's ballet vocabulary through more advanced center floor phrases, adagios, petit allegros and grande allegros. Contents and expected learning proficiencies of this course vary from term to term. May be repeated up to 12 total credits.

Learning Outcomes

Upon successful completion of this course, student should be able to:

1. Efficient alignment
2. Articulation of hip joint and feet
3. Placement of arms in port de bra
4. Spinal integration in port de corps
5. Ability to maintain core support during ballet barre exercises
6. Ability to correctly demonstrate plies, tendus, degages, petite battements, rond de jambs, developpes and fondus
7. Ability to perform positions of the body, complex port de bras and port de corps
8. Ability to combine ballet jumps and traveling steps
9. Name and perform exercises with technical ballet terms

D 188 - Jazz Dance 1

2 Credit(s)

This beginning level class accommodates the pre-major and non-major student. Jazz movements are introduced which incorporate isolations, spatial awareness, and rhythmic variations. Students are encouraged to take ballet and modern to augment their jazz training. Contents and expected learning proficiencies of this course vary from term to term. May be repeated up to 12 total credits.

Learning Outcomes

Upon successful completion of this course, student should be able to:

1. An increase in jazz technique and style
2. An appreciation and discipline in the jazz idiom
3. Knowledge of proper alignment and use of the body
4. Ability to retain simple movement phrases
5. Improved strength, flexibility and endurance in the field of dance
6. Simple coordination and syncopated movement skills

D 194 - Hip Hop 2

2 Credit(s)

This intermediate level course explores Hip-Hop dance vocabulary and style. With emphasis on athleticism in dance, isolations, intricate rhythmic patterns, and complex dance combinations, students are expected to be in good condition free of chronic injuries. Contents and expected learning proficiencies of this course vary from term to term. May be repeated up to 12 total credits.

Learning Outcomes

Upon successful completion of this course, student should be able to:

1. Demonstrate intermediate level skill in Hip-Hop, Jazz Dance, and Street Dance
2. Sophisticated coordination and rhythmic movement skills
3. Improved strength, flexibility and endurance
4. Have the ability to retain simple movement phrases
5. Have an appreciation for the history of Hip-Hop
6. Have a deeper understanding of proper alignment

D 195 - Pointe

1 Credit(s)

Pointe focuses on building strength, coordination, and stability en pointe. Work at the barre includes leve, releve, and bouree. Center work includes some pointe work, and variations where students work in soft ballet shoes. This Pointe class focuses on the ability to articulate quarter, half, three-quarter and full pointe; cleanly execute 5th position, and consistent control of turn out. Students attending this beginning through intermediate course must be at an intermediate level in Ballet, and be taking a regular Ballet class concurrently with Pointe. May be repeated for up to 12 credits.

Prerequisite: D 186 or D 187

Learning Outcomes

Upon completion of this course the student will be able to:

1. Be able to perform and articulate the quarter, half and full pointe at the barre
2. Know the dynamics of alignment and apply that knowledge directly to variations in centre
3. Be able to move from barre to centre work with strength and clarity
4. Express meaning and emotion through performing variations
5. Develop personal movement "voice" with honest and open expression
6. Perform variations with self-confidence and ease
7. Work with others with respect and value for diversity

D 251 - Looking at Dance

4 Credit(s)

This fun and enriching course focuses on various cultural and historical perspectives of dance. From Hip Hop to Classical Ballet, from Folk to World dance, students explore dance as an art form in its expressive, communicative, and aesthetic aspects. A required course for dance majors, students develop an understanding and appreciation for dance as a performing art.

Prerequisite: WR 121 recommended

Learning Outcomes

Upon successful completion of this course, student should be able to:

1. Discuss dance as a basic human activity
2. Analyze the use of space, time, dynamics, form and content of a dance
3. Recognize choreographic elements in varied dance works
4. Articulate verbally and in writing the basics for appreciating or not, any given work of choreography

D 256 - Anatomy of the Moving Body

4 Credit(s)

An introduction to anatomy of the human body in movement. Areas of focus include the skeleton, joints, connective tissues, muscles, the nervous system, and respiration. Anatomical terminology and kinesiological vocabulary are used to analyze movement. Emphasis is placed on student exploration of their physicality in movement. Sensation based knowledge is valued for application in movement, creative thinking, and injury prevention.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Identify anatomical terminology for bones and muscles of the body
2. Describe how bones, joints and muscles coordinate to support movement
3. Analyze movement using kinesiological term

D 257 - Dance Improvisation

2 Credit(s)

This course focuses on exploring and creating new movement through dance improvisation in a fun inviting atmosphere. Students work in solos, duets, and groups, to develop spontaneity, confidence, and awareness as they experience dance as a creative process. Contents and expected learning proficiencies of this course vary from term to term. May be repeated up to 12 total credits.

Learning Outcomes

Upon successful completion of this course, student should be able to:

1. Improvise a dance phrase based on selected structures
2. Demonstrate a working knowledge of stage space

3. Identify and demonstrate manipulations of a given dance movement

4. List and explain the elements of movement as an expressive form such as body, dynamics, shape and space

D 260 - Group Choreography

3 Credit(s)

Group choreography tools and techniques are learned and applied. Emphasis is placed on dynamics, spatial relationship, clarity and form. Students learn to articulate personal responses to choreographic projects while exploring individual creativity. Contents and expected learning proficiencies of this course vary from term to term. May be repeated up to 12 total credits.

Prerequisite: D 257 and D 160

Learning Outcomes

Upon successful completion of this course, student should be able to:

1. Create a dance phrase or movement motif as thematic material for group choreography
2. Identify and demonstrate manipulative devices in creating variations of dance themes for group works
3. Demonstrate improvisation skills and ability to design improvisation structures for a group
4. List and explain the elements of dance movement as an expressive form such as body, dynamics, shape and space

D 261 - Dance Rehearsal and Performance

1-3 Credit(s)

Designed to provide practical application of classroom theory and skills, this course is taken by students in our annual dance concert performances. Contents and expected learning proficiencies of this course vary from term to term. May be repeated up to 12 total credits.

Learning Outcomes

Upon successful completion of the course, students will be able to:

1. Demonstrate performance skills and rehearsal skills in dance
2. Demonstrate experience in the discipline of company rehearsals and the demands it places on the individual performer
3. Perform in a public performance

Dental Assisting

DA 102 - Advanced Clinical Experiences

3 Credit(s)

Must be enrolled in the Dental Assisting Program. Knowledge and skills taught throughout the program are utilized as students apply a variety of expanded function chairside assisting and client care skills.

Prerequisite: DA 195 and DA 196 with a grade of C or higher; P/NP no accepted

Learning Outcomes

Students who successfully complete this course will be able to:

1. Deliver fabricated trays and instructions for home teeth whitening system
2. Understand use of periodontal dressing
3. Obtain accurate alginate impressions on live clients
4. Proficiently place rubber dams on live clients
5. Effectively coronal polish teeth on live clients
6. Proficiently place sealants on teeth of live clients
7. Demonstrate ability to effectively pack gingival retraction cord on live client
8. Demonstrate proficiency in sterilization duties
9. Demonstrate proficiency in 4-handed chairside assisting skills

DA 103 - Dentistry Law and Ethics

2 Credit(s)

Must be enrolled in the Dental Assisting Program. Course content includes the development of dentistry and its related professions. Covers ethics and jurisprudence for dental professionals. A study of the Oregon Dental Practice Act and comparison of other states, roles of the dental health team, and an introduction to the dental office environment are also included in this course.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Pronounce, define and spell correctly dental terminology introduced in reading, written assignments, during online classroom activities, and class forums
2. Differentiate between members of the dental health team, their intra-office responsibilities, educational background, licensure and/or certification requirements, degrees awarded, professional organizations, and describe how they function as a team
3. Differentiate between and compare the various dental specialties

4. Compare the concepts of law and ethics and describe their applicability to the practice of dental assisting
5. Respond to and understand questions regarding the Oregon Dental Practice Act, understand how to find a Dental Practice Act in whatever state you may live or practice in, and understand how to find out what dental assistants are allowed to do in each state, including the one that you live and/or practice in
6. Legal documentation of patient records

DA 105 - Infection Control

2 Credit(s)

This course covers methods and techniques to avoid cross contamination in a dental setting. Students will learn infection control terminology and practices essential for patient and operator safety, including microbiology, disease transmission, asepsis, infection control, and legalities of regulatory agencies.

Learning Outcomes

The student will be able to:

1. Describe and explain the principles, concepts and steps for the following clinical functions: a. operation of sterilization equipment b. aseptic techniques used during patient treatment c. protection of the assistant and the operator from cross-contamination d. protection of patients prior to, during, and after treatment from cross-contamination
2. Discuss principles, procedures and personal behaviors designed to achieve sterilization and optimum infection control in the dental operator
3. Describe products used and list the steps taken to ensure sterilization of instruments and to test sterilizers for microbial kill
4. Identify bloodborne pathogens and chemical hazards that present personal danger to dental healthcare workers
5. Explain the clinical significance of communicable diseases, the modes of transmission, types, epidemiology, and vaccines available for prevention
6. Discuss the rationale of the procedures outlined in the LCC Dental Exposure Control plan to eliminate hazards and/or potential transmission of infectious microorganisms during performance of patient treatment

DA 107 - Dental Health Education 1

1 Credit(s)

Must be enrolled in the Dental Assisting Program. This course covers the basic concepts of preventive dentistry including the study of plaque-related diseases, fluoride therapy, brushing and flossing techniques.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Develop a philosophy of preventive dentistry
2. View preventive dentistry as an integral part of the overall field of dentistry
3. Define plaque and its relationship to dental caries and periodontal disease
4. Recognize and define characteristics of healthy and non-healthy periodontium
5. Describe the direct method of applying disclosing solution and its purpose
6. Describe the procedure, types, advantages, and disadvantages of topical fluoride methods
7. List and describe the different brushing techniques
8. Describe and demonstrate the correct use of dental floss
9. Identify and describe the use of other oral physiotherapy aids
10. Maintain and evaluate a personal nutrition calendar
11. Identify areas of change for personal growth in "wellness" lifestyle
12. Identify causes of early childhood caries
13. Prepare an oral hygiene instruction presentation for 3 patients of different circumstances

DA 108 - Dental Health Education 2

3 Credit(s)

Must be enrolled in Dental Assisting program. This course covers the practical application of preventive dentistry concepts and case presentation tools. Includes alginate impressions, patient motivation, coronal polishing, fluoride application, nutritional counseling, the recognition of normal and abnormal oral conditions and community service programs.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Identify areas of change for personal growth in "wellness" lifestyle
2. Plan appropriate oral hygiene presentation for a target group
3. Apply correct procedures to effectively perform coronal polishing
4. Apply knowledge of oral pathology terms and conditions in order to identify lesions or abnormalities

DA 110 - Dental Health Sciences

3 Credit(s)

This course covers the structure and function of cells, tissues, organs, and systems of the human body, as well as bacteriology, microbiology, physiology, and the importance of these as related to dentistry.

Learning Outcomes

The student will be able to:

1. Describe the division of the human body using correct directional terminology.
2. Describe the structure and function of body cells and the structure and function of body tissue.
3. Describe the histology of the bone, various processes and depressions, and the structure of the vertebral column.
4. Name the bones of the thorax, pelvis, and extremities.
5. Describe the types of joints found in the body.
6. Name the three types of muscles and describe their structure and function.
7. Describe the action of the muscles, how energy is used for muscular contraction and types of muscle attachment.
8. Know the general structure and function of the Central Nervous System and the Peripheral Nervous System.
9. Explain the function of the main components of the Endocrine System.
10. Name the components of the Circulatory System and describe their functions.
11. Describe the relationship of the blood and Lymphatic Systems.
12. Explain the function of the Non-specific Body Defenses and the function of the Immune System.

DA 115 - Dental Anatomy

3 Credit(s)

Must be enrolled in the Dental Assisting Program. This course covers the study of head & neck anatomy with emphasis on oral structures, individual teeth and tooth surfaces using the universal numbering system.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. List, both orally and in writing, the distinguishing characteristics of the human dentition
2. Compare and contrast the anatomical landmarks of the primary and permanent teeth
3. Define dental anatomy terminology
4. Utilize the universal numbering system to identify dentition
5. Describe in writing the symptoms and treatment for TMJ disorder
6. Describe in writing the taste sensations of the tongue
7. Show an awareness of the differences of the maxillary and mandibular teeth and their location in the mouth
8. Name the bones and major muscles and nerves of the head and neck
9. Define the terms used with smokeless tobacco and describe the effects of smokeless tobacco on the oral cavity

DA 192 - Dental Materials

3 Credit(s)

Must be enrolled in the Dental Assisting Program. Course content covers the composition, clinical properties, preparation, use and storage of materials, and study model construction used in dentistry.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Identify and describe in writing, the principal and secondary uses, advantages and disadvantages, chemical and mechanical properties of each dental material studied
2. Prepare each material in a manner demonstrates its normal setting time, strength, and durability
3. Demonstrates the operation of lab equipment properly, safely, and efficiently
4. Perform all laboratory skills assigned with 80% accuracy
5. Select the correct equipment to accurately manipulate each dental material
6. Follow established safety procedures and OSHA guidelines when working in the laboratory setting

DA 193 - Dental Materials 2

3 Credit(s)

Must be enrolled in the Dental Assisting Program. Course covers completion of laboratory procedures from DA 192 associated with dentistry, such as placement of filling materials, retainers, bleaching trays, denture relines, temporary crowns &

restorations, sealants and custom trays.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Identify the principle and secondary uses, advantages and disadvantages, and limitations of each material studied
2. Identify factors which affect the clinical properties of given dental materials
3. Demonstrate appropriate technique for all laboratory procedures
4. Operate equipment properly, safely, and in such a way that equipment maintenance is maintained OMIT
5. Follow safety procedures and OSHA guidelines when working in the laboratory setting
6. Demonstrate proper manipulation, fabrication and polishing of specified laboratory materials and appliances
7. Practice, direct and indirect vision, utilizing a counter-mounted typodont and simulation units

DA 194 - Dental Office Procedures

3 Credit(s)

Must be enrolled in the Dental Assisting Program. Principles of appointment planning, telephone techniques, case presentation, communications & marketing, and management of client records using Eaglesoft dental software. Teaching is done both online and in a computer lab to support computerized instruction.

Learning Outcomes

Students who successfully complete this course will be able to:

1. The responsibility of a dental business assistant
2. The criteria for handling an appointment book
3. Scheduling appointments on paper and electronically
4. Telephone techniques for incoming/outgoing calls
5. Financial arrangement for payment of account
6. Pretreatment estimates
7. Insurance for completion
8. Bookkeeping systems
9. Computer use in dental business offices
10. Records management
11. Recall systems
12. Marketing techniques in dentistry
13. Supplies and inventory control
14. Handling mail
15. Writing office newsletters

DA 195 - Chairside Procedures 1

5 Credit(s)

Must be enrolled in the Dental Assisting Program. Course covers chairside assisting procedures, such as preparation of client, oral evacuation techniques, instrument exchange, dental examinations, charting, & operative dentistry.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Define the meaning of multi-handed dentistry, and its advantages to patients, dentists, and assistants
2. Recall and use principles and concepts surrounding aseptic sterilization as it relates to current health and safety standards
3. Apply the principles and concepts covering the following supportive functions: equipment identification and function, positioning of the dental team and patient, dismissal of the dental patient, organization of the dental instrument tray for selected procedures, measures to protect the assistant and the operator, measures to protect patients prior to, during, and after treatment, post-operative instructions for amalgam and anterior restorative treatment
4. Apply the principles and concepts covering the following clinical functions: operation of sterilization equipment, aseptic techniques used during patient treatment, manipulation and transfer of the dental instrument, assembly, placement, and removal of the matrix band and matrix strip, dental charting, rubber dam application and removal - one typodont and one live client, removal of debris and fluids from the mouth, use of the air and water syringe, protection of the assistant and the operator, protection of patients prior to, during, and follow-up treatment, intraoral and extraoral screening
5. Apply teamwork strategies that will demonstrate successful work habits
6. Implement good organizational and time management skills
7. Use the Lane Community College Exposure Control Manual to apply standard operating procedures in all clinical and laboratory activities
8. Describe and demonstrate the procedures for: completing and evaluating the health questionnaire and general physical evaluation, dental charting, intraoral and

extraoral inspection, and assessing vital signs

9. Identify bloodborne pathogens and chemical hazards that present personal danger to dental health care workers and discuss the rationale of the procedures outlined in the LCC Exposure Control plan to eliminate the hazard and/or potential transmission of infectious microorganisms during performance of patient treatment
10. Discuss the clinical significance of communicable diseases, the modes of transmission, types, epidemiology, and vaccines
11. Use the Lane Community College Exposure Control Program to apply standard operating procedures in all clinical and laboratory activities
12. Describe and demonstrate the procedures for: completing and evaluating the health questionnaire and general physical evaluation, dental charting, intraoral and extraoral inspection, and assessing vital signs

DA 196 - Chairside Procedures 2

7 Credit(s)

Must be enrolled in the Dental Assisting Program. Course covers signs & symptoms of medical emergencies that may occur in the dental office. Specialties of dentistry, principle procedures, instrument set-ups, and clinical experience in 4-handed dentistry are also included.

Learning Outcomes

Students who successfully complete this course will be able to:

1. List in writing and define the eight dental specialties
2. Identify items needed for common specialty procedures
3. Apply the principles and concepts covering: pharmacology, pediatrics, oral surgery, pain control, prosthodontics, orthodontics, endodontics, periodontics, operative dentistry
4. Describe and demonstrate the roles of both assistant and doctor during composite restoration procedure
5. Chart common conditions in general dentistry and dental specialties
6. Punch, place, and remove rubber dam to stated criteria
7. Locate placement sites for topical anesthetic
8. Demonstrate Endodontic file measurement and the drying of pulp canals with paper points
9. Demonstrate thorough proper sterile techniques and knowledge of OSHA regulations
10. Demonstrate the following orthodontic functions: sizing orthodontic bands, re-cementing loose orthodontic bands, removing orthodontic bands, placement of ligatures, placing arch wires, placement of orthodontic separators and brackets, alginate impressions

DA 210 - Dental Radiology 1

4 Credit(s)

Must be enrolled in the Dental Assisting Program. Course covers background, terminology, & physics associated with exposing intra-oral radiographs and digital images. Health, safety measures and legalities are included. Exposing technique, processing, mounting and critiquing are covered in lecture and lab.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Define terminology as presented in this course.
2. Understand ionizing radiation and basic principles of x-ray generation.
3. Understand factors influencing image formation and image receptors.
4. Know the biological effects of radiation.
5. Know radiological health protection and safety measures.
6. Know radiographic film composition.
7. Understand legal issues and guidelines related to dental radiology.
8. Know dark room procedures including: film processing, maintenance of darkroom and darkroom equipment, quality assurance and record keeping.
9. Demonstrate knowledge of quality assurance procedures.
10. Know normal radiographic landmarks, artifacts and shadows as they appear on film.
11. Know appropriate radiographic surveys, film type and record keeping.
12. Know intraoral radiographic techniques including paralleling and bisecting.
13. Know correct film mounting procedures.
14. Know correct film viewing techniques.
15. Show understanding of appropriate aseptic techniques in the radiology operatories and darkroom.
16. Have an understanding of radiation as a benefit and hazard to society.
17. Know common radiographic errors (exposure and darkroom).
18. Understand the concept of informed consent prior to taking radiographs.
19. Demonstrate the technique and understand the indications for use of the vertical bitewing radiograph.

20. Know Lane Community College's radiation policies.

DA 211 - Dental Radiology 2

3 Credit(s)

Must be enrolled in the Dental Assisting Program. Continuation of DA 210. Provides basis for occlusal film projections, digital radiology, 3D imaging and extra-oral radiographs. Students apply all skills learned in Fall term, and progress to exposure of dental images on clinical patients.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Accurately utilize terminology as presented in this course and DA 210
2. Use understanding of ionizing radiation and basic principles of x-ray generation to adhere to ALARA standards
3. Demonstrate understanding of factors influencing image formation and image receptors to avoid non-diagnostic films
4. Utilize radiological health protection and safety measures
5. Adhere to legal guidelines related to dental radiology
6. Accurately utilize exposing, processing, and mounting procedures for indirect and direct digital radiography
7. Demonstrate knowledge of quality assurance procedures and record keeping
8. Identify normal radiographic landmarks, artifacts and shadows as they appear on images to determine diagnostic from non-diagnostic
9. Utilize appropriate intraoral radiographic techniques including paralleling and bisecting based on anatomy
10. Utilize appropriate aseptic techniques in all radiology procedures and clinic areas
11. Demonstrate knowledge of the equipment, benefits and procedures used in digital radiography
12. Demonstrate knowledge of the equipment, benefits and procedures used in 3D imaging
13. Understand the different types of extra-oral radiographs and exposure techniques
14. Expose various occlusal projections
15. Demonstrate correct use of NOMAD imaging system
16. Demonstrate knowledge of exposing and interpreting panographs
17. Understand and utilize the concepts of dealing with special needs clients
18. Know Lane Community College's radiation policies

Dental Hygiene

DH 107 - Dental Infection Control and Safety

1 Credit(s)

Introduction to the chain of infection, infectious and plaque associated diseases affecting the dental office environment and protection of the health care worker. Topics include bloodborne pathogens, federal regulations, dental office clinical asepsis protocol, LCC Exposure Control Program, management of waste, office safety programs, chemical and emergency plans. Competency in Infection Control protocols are evaluated during laboratory sessions.

Prerequisite: Admission to the Dental Hygiene program.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Identify and recognize clinical significance of communicable diseases, modes of transmission, types, microbiology, epidemiology and vaccines.
2. Identify bloodborne pathogens and chemical hazards presenting a danger in the dental environment.
3. Select and use principles, procedures, and personal behaviors designed to achieve prevention of transmissible disease.
4. Demonstrate use of exposure control protocols to achieve infection control in the oral health care environment.
5. Identify products and procedures used in instrument reprocessing and list the steps taken to perform sterilization protocols and biological testing of sterilizers.
6. Recognize and differentiate the epidemiology, symptoms and modes of transmission for hepatitis diseases, HIV+, AIDS, Tuberculosis and common diseases encountered in the dental environment.
7. Apply standard operating procedures from the LCC Exposure Control Plan to simulated clinical and laboratory activities.
8. Demonstrate knowledge of the application of Occupational Safety and Health Administration regulations to the practice of dentistry and HIPPA Privacy Standards and Guidelines.

9. Establish and maintain an environment: a. that protects against environmental hazards b. uses standardized clinical protocols and c. protects against transmission of disease.

10. Apply concepts and protocols: maintain a clean and sterile dental environment; apply infection control procedures and use OSHA regulations; use the LCC Exposure Control Manual of universal safety practices in clinical care and facility management.

DH 113 - Dental Anatomy and Histology

2 Credit(s)

The study of dental histology and morphology of the teeth and surrounding soft tissues.

Prerequisite: Admission to the Dental Hygiene program.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Define and recognize epithelium arrangement and connective tissue.
2. Define the function of the four layers of epithelium and discuss their locations.
3. Describe the development and components of enamel, dentin, pulp, and cementum.
4. Define the periodontal ligament, listing all fibers.
5. Identify the embryonic structures, their origins and future oral facial structures.
6. Describe the process of embryonic development of oral facial structures.
7. Identify the brachial arches of embryonic development and their corresponding future structures.
8. Explain the growth periods of the teeth.
9. State accurate eruption dates of all teeth.
10. Identify the different types, functions, and anatomic parts of each tooth.
11. Identify the points, angles and planes of individual teeth and their relationship to occlusion.
12. Identify all teeth by using the universal numbering system.
13. Duplicate important anatomy of all individual permanent teeth.

DH 118A - Clinical Dental Hygiene 1

4 Credit(s)

Introduction to basic instrumentation, assessment procedures, and clinical protocol for dental hygiene care.

Prerequisite: Admission to the Dental Hygiene program.

Corequisite: DH118A and DH 118B require simultaneous registration.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Relate the history of dental hygiene to the concept of preventive dentistry and describe the dental hygienist's scope of practice.
2. Discuss the methods of plaque control presented in class, and state their applicability to client care.
3. Discuss the rationale for the exploring and periodontal probing procedures, compare the variety of explorers and periodontal probes which are presented in class, and demonstrate the Lane Community College procedure for performing the periodontal assessment examination.
4. List and discuss the dental deposits discussed in class, the steps in deposit formation, and their effect on the oral tissues.
5. Define three instrumentation skills which dental hygienists perform and identify the instruments appropriate for each skill.

DH 118B - Clinical Dental Hygiene 1 Lab

2 Credit(s)

Clinical lab required for DH 118A.

Prerequisite: Admission to the Dental Hygiene program.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Name, locate and demonstrate proper utilization of the parts of the dental unit.
2. Practice and demonstrate proper client positioning.
3. Practice and demonstrate proper operator and dental light positioning.
4. Demonstrate disinfecting the dental unit and light, and place appropriate barriers prior to client seating.
5. Identify and verbalize all oral landmarks listed on Basic Clinical Evaluation (BCE).
6. Record and compute plaque indices.
7. Utilize compressed air for increased visibility.
8. Apply disclosing solution using the direct method, covering only the intraoral area desired.
9. Interview a client and record accurately all parts of a medical history.

10. Demonstrate the mouth mirror for indirect vision, retraction, and illumination.
11. Demonstrate proper pen grasp with all instruments issued.
12. Demonstrate appropriate fulcrums and body positions for use with all instruments.
13. Demonstrate correct instrument adaptation, angulation, and insertion for working and exploration strokes with all instruments.
14. Describe, demonstrate, and compare working and exploratory strokes with all instruments.
15. Demonstrate correct adaptation of the ODU 11-12 explorer to all areas of the mouth.
16. Demonstrate the correct adaptation of the periodontal probe on six surfaces of each tooth in the mouth.
17. Demonstrate continuing progress in developing the manual dexterity required to perform: effective detection and removal of hard deposits with no soft tissue trauma, proper maintenance of instrument blades, complete removal of extrinsic stains with no soft tissue trauma.
18. Describe and demonstrate the procedure and evaluation of medical history, dental chartings, periodontal assessments, oral inspection (ACS screening), obtain vital signs, and clinical record keeping.
19. Utilize correct dental terminology in all clinical activities.
20. Evaluate self in methods of plaque control removal using the techniques presented in class with a goal of attaining 90% plaque free.
21. Demonstrate strict adherence to all methods for the prevention of disease transmission.

DH 119A - Clinical Dental Hygiene 2

3 Credit(s)

Continuation of preclinical skills in instrumentation, evaluation of clients, treatment planning and client education. Didactic, laboratory and clinical instruction, with emphasis on removal of deposits, preparation for clients and the application of preventive dental procedures. Client care begins with the child, adolescent and adult patient with limited periodontal needs.

Prerequisite: Admission to the Dental Hygiene program.

Corequisite: DH119A and DH 119B require simultaneous registration.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Utilize dental terminology presented within all courses in the Dental Hygiene program during clinical activities. When written, the terminology must be spelled correctly.
2. Utilize the dental hygiene process of care –assessment, diagnosis, planning, implementation, and evaluation when providing patient care.
3. Demonstrate the procedure and evaluation of the medical history, dental charting, oral hygiene assessment (including plaque index), periodontal assessment, oral inspection, and clinical record keeping.
4. Describe and/or demonstrate the procedure, types, advantages and disadvantages of methods for applying topical fluorides; and applicability of the variety of products for systemic use.
5. Discuss legal and ethical responsibilities of the hygienist.
6. Demonstrate accuracy in appointment records and clinical procedures as presented in the Policies and Procedures Manual.
7. Identify the tooth discolorations and dental stains presented in class, methods, and polishing equipment appropriate for removal.
8. Identify and describe the applicability of a variety of oral physiotherapy devices and dental products.
9. Demonstrate continuing progress in developing skills required to perform: effective detection and removal of hard deposits with no soft tissue trauma, proper maintenance of instrument blades, complete removal of extrinsic stains with no soft tissue trauma.
10. Demonstrate correct instrument insertion, adaptation, and angulation for working and exploratory strokes using all instruments assigned in pre-clinical labs.
11. Describe and identify the etiology and classifications of caries.
12. Demonstrate strict adherence to all methods for the prevention of disease transmission presented in classes.
13. Recognize deposit retention factors and plan treatment for the prevention of deposit accumulation.
14. Utilize principles of child client management discussed in class.

DH 119B - Clinical Dental Hygiene 2 Lab

4 Credit(s)

Clinical lab required for DH 119A.

Prerequisite: Admission to the Dental Hygiene program.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Utilize dental terminology presented within all courses in the Dental Hygiene program during clinical activities. When written, the terminology must be spelled correctly.
2. Utilize the dental hygiene process of care –assessment, diagnosis, planning, implementation, and evaluation when providing patient care.
3. Demonstrate the procedure and evaluation of the medical history, dental charting, oral hygiene assessment (including plaque index), periodontal assessment, oral inspection, dental hygiene treatment planning and clinical record keeping.
4. Describe and/or demonstrate the procedure, types, advantages and disadvantages of methods for applying topical fluorides; and applicability of the variety of products for systemic use.
5. Recognize the risks and benefits of caries prevention and remineralization protocols, with implementation following dental diagnosis by the clinical dentist.
6. Demonstrate the legal and ethical responsibilities of the hygienist.
7. Demonstrate accuracy in appointment records and clinical procedures as presented in the Policies and Procedures Manual.
8. Identify the tooth discolorations and dental stains and select and apply the methods and appropriate equipment appropriate needed for removal.
9. Identify and describe the applicability of a variety of oral physiotherapy devices and dental products.
10. Demonstrate continuing progress in developing skills required to perform: effective detection and removal of hard deposits with no soft tissue trauma, proper maintenance of instrument blades, complete removal of extrinsic stains with no soft tissue trauma.
11. Demonstrate correct instrument insertion, adaptation, and angulation for working and exploratory strokes using all instruments assigned in pre-clinical labs.
12. Describe and identify the etiology and classifications of caries.
13. Demonstrate strict adherence to infection control protocols.
14. Recognize deposit retention factors and plan treatment for the prevention of deposit accumulation.
15. Utilize principles of child client management discussed in the co-requisite course.

DH 120A - Clinical Dental Hygiene 3 Lecture/seminar

3 Credit(s)

Lecture, instructional lab and clinical course focusing upon the dental hygiene process of care, advanced instrumentation techniques and treatment of the slight to moderate periodontal patient.

Prerequisite: Admission to Dental Hygiene program.

Corequisite: DH120A and DH 120B require simultaneous registration.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Recognize and identify specific organisms microscopically which are present in health and in disease.
2. Identify and describe the four microbiologic risk factors.
3. Utilize the microscope specimen for patient motivation.
4. Describe the learning process.
5. Discuss how health attitudes and value systems are developed.
6. Describe the learning ladder continuum.

DH 120B - Clinical Dental Hygiene 3 Clinic Lab

4 Credit(s)

Clinical lab required for DH 120A.

Prerequisite: Admission to the Dental Hygiene program.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Utilize dental terminology presented within all courses in the Dental Hygiene program during clinical activities. When written, the terminology must be spelled correctly.
2. Utilize the dental hygiene process of care –assessment, diagnosis, planning, implementation, and evaluation when providing patient care.
3. Demonstrate strategies of used to motivate patient to make oral health changes.

4. Recognize and assess the nutritional needs of the patient and its relationship to oral health.
5. Demonstrate the procedure and evaluation of the medical history, dental charting, oral hygiene assessment (including plaque index), periodontal assessment, oral inspection, dental hygiene treatment planning and clinical record keeping.
6. Describe and/or demonstrate the procedure, types, advantages and disadvantages of methods for applying topical fluorides; and applicability of the variety of products for systemic use.
7. Recognize the risks and benefits of caries prevention and remineralization protocols, with implementation following dental diagnosis by the clinical dentist.
8. Demonstrate the legal and ethical responsibilities of the hygienist.
9. Demonstrate accuracy in appointment records and clinical procedures as presented in the Policies and Procedures Manual.
10. Identify the tooth discolorations and dental stains and select and apply the methods and appropriate equipment appropriate needed for removal.
11. Identify and describe the applicability of a variety of oral physiotherapy devices and dental products.
12. Demonstrate continuing progress in developing skills required to perform: effective detection and removal of hard deposits with no soft tissue trauma, proper maintenance of instrument blades, complete removal of extrinsic stains with no soft tissue trauma.
13. Demonstrate correct instrument insertion, adaptation, and angulation for working and exploratory strokes using all instruments assigned in previous labs.
14. Describe and identify the etiology and classifications of caries.
15. Demonstrate strict adherence to all methods for the prevention of disease transmission presented in classes.
16. Recognize deposit retention factors and plan treatment for the prevention of deposit accumulation.
17. Utilize principles of patient management discussed in the corequisite course.

DH 132 - Dental Materials for the Dental Hygienist

2 Credit(s)

Composition, properties and manipulation of dental materials. Laboratory and clinical experience with dental materials.

Prerequisite: Admission to Dental Hygiene program.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Describe the steps involved and materials used in the construction of a denture.
2. Summarize the procedures and materials used for temporary relining of a denture.
3. Describe and demonstrate removable prosthetic dental appliance cleaning and maintenance procedures.
4. Describe the uses, chemical compositions, properties and procedures for cements, bases and liners.
5. Demonstrate cementation of a temporary crown.
6. Demonstrate placement of a temporary restoration
7. Demonstrate the mixing and placement of calcium hydroxide liner.
8. Demonstrate the mixing of Zinc Phosphate Cement to luting and to base consistency.
9. Demonstrate mixing of a temporary Glass Ionomer cement.
10. Describe functions, properties, placement and client care instructions for periodontal dressings.
11. Demonstrate basic ability to place and remove a periodontal dressing.
12. Describe the rationale for periodontal surgical procedures.
13. Discuss how surgical suturing materials and needles are classified.
14. Demonstrate basic ability to place and remove sutures.
15. Describe the uses, composition, mixing and handling and characteristics of impression materials, including irreversible and reversible hydrocolloids, elastomers, compounds and zinc-oxide-eugenol (ZOE) pastes.
16. Demonstrate basic ability to mix alginate impression material and take impressions using this material.
17. Describe the uses, composition, handling and mixing, properties and types of gypsum materials.
18. Demonstrate basic ability to mix, pour and trim a gypsum cast.
19. Describe the procedures and materials used for fabrication of fixed indirect restorations and prostheses.
20. Demonstrate knowledge of professional whitening methods, both in-office and at-home.
21. Demonstrate basic ability to fabricate dental whitening trays.
22. Demonstrate basic ability to remove orthodontic resins from extracted teeth.

DH 139 - Special Needs Patient and Dental Emergencies

2 Credit(s)

Knowledge and skill development in assessment, diagnosis, planning and treatment of dental patients with developmental disabilities, complex medical problems and significant physical limitations. Development of critical thinking and problem solving skills in the care of patients with special needs, prevention of emergencies and selection of treatment.

Prerequisite: Admission to Dental Hygiene program.

Learning Outcomes

Students who complete this course will be able to:

1. Recognize physical, mental, medical, social, and special needs of people who are medically compromised.
2. Understand the demographics, etiology, limitations, and diseases associated with medically compromised, developmental disabilities and significant physical limitation patients.
3. Adapt procedures and treatment plans to meet the needs of dental hygiene special needs patients.
4. Become familiar with medications, oral manifestations and emergencies in the management of special needs conditions.
5. Research and develop effective strategies for providing dental hygiene care to the medically compromised, developmental disabled and special needs patient.

DH 220A - Clinical Dental Hygiene 4 Lecture/seminar

2 Credit(s)

Lecture, instructional lab and clinical course focusing upon the dental hygiene process of care, advanced instrumentation techniques and treatment of the moderate to advanced periodontal patient.

Prerequisite: Admission to Dental Hygiene program

Corequisite: DH 220B

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Identify advanced instrumentation techniques, instrument characteristics, selection, and application to the moderate to advanced periodontal patient care.
2. Identify and describe characteristics of root morphology for all permanent dentition.
3. Review bloodborne pathogens and infection control in the workplace.
4. Identify the dental specialties recognized by the American Dental Association and discuss the scope of practice and educational requirements for each specialty.
5. Understand supportive treatment procedures in regard to dentinal hypersensitivity and desensitizing agents.
6. Identify proper ergonomic techniques including stretching, indirect vision, alternative positions, loupes and proper lighting.
7. Identify and discuss health issues for women; to include nutrition, pregnancy, hormone related conditions, medications, osteoporosis and bisphosphonates

DH 220B - Clinical Dental Hygiene 4 Lab

5 Credit(s)

Clinical lab required for DH 220A

Prerequisite: Admission to Dental Hygiene program.

Corequisite: DH 220A

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Identify advanced instrumentation techniques, instrument characteristics, selection, and application to the moderate to advanced periodontal patient care.
2. Identify and describe characteristics of root morphology for all permanent dentition.
3. Review bloodborne pathogens and infection control in the workplace.
4. Identify the dental specialties recognized by the American Dental Association and discuss the scope of practice and educational requirements for each specialty.
5. Understand supportive treatment procedures in regard to dentinal hypersensitivity and desensitizing agents.
6. Identify proper ergonomic techniques including stretching, indirect vision, alternative positions, loupes and proper lighting.
7. Identify and discuss health issues for women; to include nutrition, pregnancy, hormone related conditions, medications, osteoporosis and bisphosphonates
- 8.

DH 221A - Clinical Dental Hygiene 5

2 Credit(s)

Lecture, instructional lab and clinical course focusing on continuation of the theory and practice of the dental hygiene process of care, including advanced instructional theory and practice in therapeutic interventions for comprehensive dental hygiene care.

Prerequisite: Admission to Dental Hygiene program

Corequisite: DH 221B

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Recognize the importance of applying principles of communication when implementing nonsurgical periodontal therapy.
 2. Value self-care education and the dental hygiene case presentation (consultation).
 3. Identify strategies to enhance a patient education and skill development.
 4. Define the role of the dental hygienist during a dental emergency appointment.
 5. Analyze the conditions and needs of the advanced periodontal patient and dental hygiene services for these patients.
 6. Recognize and identify appropriate dental hygiene service codes for dental hygiene clients following ADA Current Dental Terminology guidelines.
 7. Identify special considerations for the geriatric patient.
 8. Recognize and utilize information presented in case studies to correctly assess medical conditions in relation to oral conditions to recommend appropriate oral hygiene instruction and treatment planning
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DH 221B - Clinical Dental Hygiene 5 Lab

5 Credit(s)

Clinical Lab required for DH 221A

Prerequisite: Admission to Dental Hygiene program.

Corequisite: DH 221A

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Recognize the importance of applying principles of communication when implementing nonsurgical periodontal therapy
 2. Value self-care education and the dental hygiene case presentation (consultation)
 3. Identify strategies to enhance a patient education and skill development
 4. Define the role of the dental hygienist during a dental emergency appointment
 5. Analyze the conditions and needs of the advanced periodontal patient and dental hygiene services for these patients
 6. Recognize and identify appropriate dental hygiene service codes for dental hygiene clients following ADA Current Dental Terminology guidelines
 7. Identify special considerations for the geriatric patient
 8. Recognize and utilize information presented in case studies to correctly assess medical conditions in relation to oral conditions to recommend appropriate oral hygiene instruction and treatment planning
-

DH 222A - Clinical Dental Hygiene 6

1 Credit(s)

Continuation of the practice of the Dental Hygiene process of care with focus on the integration of comprehensive dental hygiene care into the general dentistry practice setting. Competency testing will prepare students for WREB board examinations and Licensure.

Prerequisite: Admission to Dental Hygiene program

Corequisite: DH 222B

Learning Outcomes

Students who complete this course will be able to:

1. Identify advanced instrumentation instrument selection and application to modern to advanced periodontal care
2. Identify and use the PSR Probe.
3. Manage electronic records with accuracy and completeness.
4. Recognize, prevent or assist with, manage and document medical emergencies.
5. Use, recognize, select and apply service codes for electronic billing while applying ADA Current Dental Terminology guidelines.
6. Document treatment plan, service codes, case type and periodontal stages and grades.
7. Apply concepts of older client care through competent care, recall and referral.

8. Prepare for licensing, employment and document preparation supporting dental hygiene professional needs.
 9. Document professional communication and understanding of the DH Process of Care.
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DH 222B - Clinical Dental Hygiene 6 Lab

5 Credit(s)

Clinical Lab required for DH 222A.

Corequisite: DH 222A

Learning Outcomes

Students who complete this course will be able to:

1. Identify advanced instrumentation instrument selection and application to modern to advanced periodontal care
 2. Identify and use the PSR Probe.
 3. Manage electronic records with accuracy and completeness.
 4. Recognize, prevent or assist with, manage and document medical emergencies.
 5. Use, recognize, select and apply service codes for electronic billing while applying ADA Current Dental Terminology guidelines.
 6. Document treatment plan, service codes, case type and periodontal stages and grades.
 7. Apply concepts of older client care through competent care, recall and referral.
 8. Prepare for licensing, employment and document preparation supporting dental hygiene professional needs.
 9. Document professional communication and understanding of the DH Process of Care
-

DH 228 - Oral Biology 1

4 Credit(s)

Identify, describe, and locate the bones of the skull, muscles, cranial nerves, blood vessels, and lymphatics of the head and neck; glands of the oral cavity; the tongue, the temporomandibular joint; and the alveolar processes. The student will also be able to explain and recognize terms and processes related to the development of the head, face and oral cavity.

Prerequisite: Admission to Dental Hygiene program

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Identify advanced instrumentation instrument selection and application to modern to advanced periodontal care.
-

DH 229 - General and Oral Pathology

3 Credit(s)

Concepts in general, systemic, and oral pathology. Emphasis on entities frequently encountered, clinical signs and symptoms, and concepts of differential diagnosis.

Prerequisite: Admission to Dental Hygiene program

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Identify and use the PSR Probe.
-

DH 233 - Anesthesia/Analgesia for Dental Hygiene Therapy

3 Credit(s)

Current science, theories and implementation of local anesthesia and nitrous oxide/oxygen conscious sedation. Review of anatomy, physiology, pharmacology, and emergency procedures associated with local anesthesia and NO₂/O₂ conscious sedation. Foundational skill development in the administration of infiltration and block anesthesia in dental hygiene procedures. Laboratory and clinical experience in administration of local anesthesia and N₂O/O₂.

Prerequisite: Admission to Dental Hygiene program

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Manage electronic records with accuracy and completeness.
-

DH 234 - Trends and Issues in Dental Hygiene

2 Credit(s)

Exploration of current trends and issues in the profession, ethics and jurisprudence, practice management and researching employments opportunities for the dental hygienist.

Prerequisite: Admission to Dental Hygiene program

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Recognize, prevent or assist with, manage and document medical emergencies

DH 237 - Community Dental Health

3 Credit(s)

An introduction to dental public health practices. Emphasis on use of an evidence based philosophy for incorporating scientific literature into community dental health practices. Instruction in basic research, statistical concepts and electronic data bases. Program planning is emphasized. Field work in public health clinics, with community groups for dental presentations and in public dental programs.

Prerequisite: Admission to Dental Hygiene program

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Use, recognize, select and apply service codes for electronic billing while applying ADA Current Dental Terminology guidelines.

DH 238 - Community Dental Health

1 Credit(s)

Preparation of a community dental health portfolio demonstrating implementation of dental health program plans and participation in field work assignments. Portfolio projects focus on the identification of community groups and development of sound approaches to dental public health needs. The student participates in field work assignments and student initiated community health promotion projects.

Prerequisite: Admission to Dental Hygiene program

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Document treatment plan, service codes, case type and periodontal stages and grades

DH 239 - Expanded Practice Concepts and Roles

3 Credit(s)

An introduction to Expanded Practice Dental Hygiene (EPDH) concepts and roles for the provision of services for underserved community groups and individuals. Emphasis and instruction will be given on the use of knowledge and skills as outlined in the State of Oregon Dental Practice Act for Expanded Practice Dental Hygiene. Field work is expected in public health clinics, community groups and public dental programs.

Prerequisite: Admission to Dental Hygiene program.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Identify legal Expanded Practice roles for the dental hygienist in Oregon
2. Provide the process of care to diverse populations within enrichment sites under the direction of a Dental Hygiene mentor
3. Perform an in-depth literature review of current expanded practice roles for a dental hygienist
4. Participate in rotations to four dental hygiene expanded practice locations representing care to children, adults, elders, elder care facilities demonstrating dental care outside a general dental clinic
5. Develop sample contracts, research and outline marketing ideas, develop record-keeping systems
6. Research and describe successful marketing strategies for dental practices. Develop contracts with collaborating dentists, or non-dental entities. Describe your role as an independent contractor to an insurance company
7. Cultural diversity as it relates to vulnerable populations and dental care delivery utilizing a new workforce model: EPDH
8. Prepare a Capstone project to include: Development of a Plan for Expanded Practice Clinician
 - o Mentor/s support and shared knowledge
 - o Legal Functions performed under Oregon Statutes
 - o Patient Practice protocols d. Infection Control, Patient Safety
 - o Patient Records, security, computers
 - o Equipment, supplies for operations
 - o Financials: billing, fees, outside services needed
 - o Communications, program planning
 - o Marketing

DH 243A - Oral Radiology 1 Lecture

2 Credit(s)

Historical background, terminology; concepts and principles of x-radiation, x-ray generation, radiologic health and safety measures; normal radiographic dental anatomy; radiographic legalities. Film technique, including critiquing, exposing, processing, and mounting. Laboratory provides skills in dental radiographic exposure on manikins as well as processing techniques.

Prerequisite: Admission to Dental Hygiene program

Corequisite: DH 243A and DH 243B are taken together and require simultaneous registration.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Apply concepts of older client care through competent care, recall and referral

DH 243B - Oral Radiology 1 Lab

1 Credit(s)

Clinical Lab required for DH 243A.

Prerequisite: Admission to Dental Hygiene program

Corequisite: DH 243A

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Prepare for licensing, employment and document preparation supporting dental hygiene professional needs

DH 244A - Oral Radiology 2 Lecture

1 Credit(s)

Continuation of Oral Radiology 1. Radiologic interpretive knowledge and skills are introduced as a diagnostic aid to assist with dental hygiene diagnosis. Patient management skills, pedodontic, edentulous, occlusal, panoramic, and accessory radiographic techniques are included. Intraoral panoramic and digital radiography on patients and practicing film interpretation skills on completed client radiographs.

Prerequisite: Admission to Dental Hygiene program. Continuation of DH 243A.

Corequisite: DH 244A and DH 244B are taken together and require simultaneous registration.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Document professional communication and understanding of the DH Process of Care.

DH 244B - Oral Radiology 2 Lab

1 Credit(s)

Clinical Lab required for DH 244A.

Corequisite: DH 244A

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Understand the purpose and use of panoramic imaging and utilize this knowledge on live clients
2. Understand the principles and application of extra-oral imaging, including types and composition of extra-oral film
3. Discuss the use and rationale of vertical bitewing exposures
4. Learn the basic skills required for radiographic interpretation of dental caries
5. Learn the basic skills required for radiographic interpretation of periodontal disease
6. Learn the basic skills required for radiographic interpretation of pulpal and periapical lesions
7. Learn the basic skills required for radiographic interpretation of developmental disturbances and lesions associated with bone
8. Understand the principles of digital and newer imaging systems as well as utilizing digital radiography and dental practice management systems
9. Learn the basic skills required to expose radiographs on pedodontic and partially/fully edentulous clients
10. Understand the importance of quality assurance, and practice radiologic health and safety measures
11. Understand how to maintain processing equipment to consistently produce quality radiographs
12. Understand and utilize film and PID placement using both the paralleling and bisection of the angle techniques
13. Understand the concept of patient management
14. Demonstrate accurate recording of radiographic information in client's record
15. Demonstrate strict adherence to all methods for the prevention of disease transmission presented.
16. Know Lane Community College's radiation policies

DH 254 - Pharmacology

3 Credit(s)

An introduction to various drugs used in the practice of dentistry; an intro to the most commonly prescribed drugs that students might encounter on a patient's medical history. Students will study nomenclature, classification, dosage, contraindications, and effects of pharmacological compounds.

Prerequisite: Admission to Dental Hygiene program

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Understand drug mechanisms of action, pharmacokinetics, and pharmacologic effects.
2. Know specific drug classifications including therapeutic uses, adverse reactions and contraindications.
3. Read and understand drug prescriptions and ability to write prescriptions specific to the practice of dental hygiene.
4. Know the laws relating to prescription writing, drug dispensing and drug disposal; knowledge of the law as it pertains to prescription writing by dental hygienists in the state of Oregon.
5. Understand the parasympathetic and sympathetic nervous systems, including drugs in each category.
6. Recognize drugs used for pain control (including local anesthesia and nitrous oxide), their indications, drug interactions and adverse effects.
7. Recognize drugs used for the treatment of mental illness, infections (including hiv), cardiovascular disease, respiratory distress, gastrointestinal disorders, endocrine disorders, and cancer. An understanding of their side effects, drug interactions and considerations in dentistry.
8. Recognize oral conditions as a side effect of drug use; identification of drugs used in alleviating oral problems.
9. Know actions, drug interactions and concerns of common herbal and nutritional supplements seen in the dental practice.
10. Understand and demonstrate ability to use appropriate reference material when needed.
11. Find and interpret new information about drugs.

DH 270 - Periodontology 1

2 Credit(s)

The study of the normal periodontium, periodontal pathology, etiology and principles of periodontal disease, examination procedures, principles of periodontal therapy, non surgical periodontal therapy and prevention modalities. American Academy of Periodontology classifications of periodontal disease, maintenance considerations and referral for specialized periodontal care are presented.

Prerequisite: Admission to Dental Hygiene program

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Describe the anatomy, histology, and clinical characteristics of the tissues of the periodontium.
2. Describe, identify, and classify bacteria (microbiology) associated with the periodontal diseases and their characteristics that contribute to their virulence.
3. Identify factors and effects of the following on the formation of periodontal disease: calculus, restorations, malocclusion, appliances, missing teeth, mouth breathing, use of tobacco, occlusion and TMJ disorders.
4. Identify the pathogenesis of the gingival diseases and periodontal diseases and their application to the classification of periodontal disease (AAP).
5. Compare and contrast the following classes of periodontal diseases and conditions as to demographics, clinical characteristics, and microflora: Gingival disease, Chronic localized and generalized periodontal disease, Aggressive localized and generalized periodontitis, Periodontitis as a manifestation of systemic disease, Abscesses of the periodontium, Necrotizing periodontal disease, Periodontitis associated with endodontic lesions, Development of acquired deformities and conditions.
6. Analyze clinical assessment information to: Describe methods to quantify plaque accumulation, periodontal status, furcation involvement, tooth mobility, root caries, and tooth wear; Identify radiographic changes seen in periodontal disease; Identify abnormal periodontium and dentition.
7. Describe, identify, and evaluate the components of non-surgical periodontal therapy, techniques, short and long term goals, process of healing after debridement procedures, and the limitations of calculus removal and clinical proficiency required by the dental hygienist.

8. Describe the steps in motivation of the compliant and non-compliant periodontal patient.
9. Describe the goals, considerations, and phases of treatment planning for dental hygiene therapy.
10. Describe the informed consent and consultation appointment for the periodontal patient.
11. Identify treatment evaluation and referral methods employed with the periodontal patient.
12. Identify and describe periodontal maintenance and referral procedures.
13. Describe antibiotic and antimicrobial protocols in the treatment of periodontal disease.

DH 271 - Periodontology 2

2 Credit(s)

Treatment of the moderate to advanced periodontal patient, treatment decisions implementing guidelines based on current American Academy of Periodontology (AAP) Disease Classification of Periodontal and Peri-Implant Diseases; and interprofessional collaboration. Studies systemic risk factors, restorative considerations, occlusion and TMJ disorders, periodontal surgeries, gingival curettage, Laser-assisted Periodontal Therapy, peri-implant disease and maintenance, periodontal emergencies, and periodontal disease in the pediatric population. Review of evidenced based medicine and periodontal research, newer treatment diagnostics and modalities.

Prerequisite: Admission to Dental Hygiene program

Learning Outcomes

1. Describe and discuss the effects of restorative dentistry to the periodontium.
2. Describe and identify periodontal emergencies, assessment procedures, and treatment.
3. Define the role of the dental hygienist in detection of occlusal abnormalities and jaw dysfunction.
4. Discuss and explain temporomandibular joint disorders and treatment for these conditions.
5. Discuss the systemic risk factors that affect and amplify periodontal conditions and treatment modifications, including interprofessional collaboration.
6. Describe the effect of cardiovascular disease, endocrine disturbances, infectious diseases, dermatologic diseases, oral cancer blood dyscrasias, and tobacco use on periodontal disease.
7. Explain and describe periodontal surgeries for periodontal defects.
8. Understand peri-implant health and diseases and the clinical guidelines for maintenance of patients with dental implants.
9. Describe and select appropriate assessment and supportive periodontal procedures for implant patients.
10. Discuss the rationale, goals and procedures for gingival curettage.
11. Discuss the rationale, goals and procedures for Laser Assisted Periodontal Therapy and describe other procedures performed with a diode laser for other oral conditions.
12. Recognize the common forms of periodontal diseases that affect the pediatric patient.
13. Describe newer treatment modalities in the periodontal field: Perioscopy, computerized risk assessments, automated probing systems, oral mucosa! examining devices for detecting oral cancer, and oral DNA testing.
14. Evaluate and select periodontal research that supports periodontal procedures performed by dental hygienists.
15. Define Evidence-Based dental literature and understand foundational elements of evidence-based practice.

DH 275 - Restorative Dentistry 1

3 Credit(s)

Introduction to restorative techniques with emphasis on posterior tooth anatomy, placement of amalgam restorations, rubber dam isolation, matrix and wedge placement. Includes etiology of the decay process, cavity classification, cavity preparation, properties of amalgam and maintenance of proper occlusal relationships with restorative treatment.

Prerequisite: Admission to Dental Hygiene program

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Understand and demonstrate safety with amalgam restorations
2. Identify anatomical characteristics of posterior teeth
3. Understand advantages and demonstrate rubber dam application

4. Identify when matrix and wedge is required and properly assemble and place
5. Discuss etiology of decay process, cavity classification, and cavity preparation
6. Demonstrate ability to place and carve amalgam restorations

DH 276 - Restorative Dentistry 2

3 Credit(s)

Continuation of study of restorative techniques with emphasis on anterior tooth anatomy. Introduction of composite restorations in restorative dentistry for anterior and posterior teeth. Bonding materials, bases and liners will be introduced. Bur identification for restorative prep and finishing. Lecture, lab and clinical practice in expanded functions as allowed by the Oregon Board of Dentistry Restorative Endorsement. Onsite lab.

Prerequisite: Admission to Dental Hygiene program. Continuation of DH 275.

Learning Outcomes

Students who complete this course will be able to:

1. Identify anatomical characteristics of anterior teeth.
2. Understand differences of composite restorative materials and bonding materials, bases and liners.
3. Identify and select proper burs for tooth preparation, restoration finishing and amalgam polish.
4. Properly select and place anterior and posterior matrix systems for composite placement.
5. Properly place and finish anterior and posterior composite restorations on typodont.
6. Demonstrate ability to place and carve amalgam and composite restorations on patients.

DH 277 - Restorative Dentistry 3

1 Credit(s)

Continuation of study of restorative techniques. Clinical and laboratory practice in restorative expanded duties as allowed by the Oregon Board of Dentistry for dental hygiene restorative practice. This will include amalgam and composite placement in typodont and clinical patients, restorative treatment planning and case presentation, restorative care and anesthesia for children. The student will become increasingly skilled in typodont and patient treatment. Onsite lab.

Prerequisite: Admission to Dental Hygiene program. Continuation of DH 276.

Learning Outcomes

Upon successful completion of this course, the student will:

1. Review and update patient medical history and restorative treatment plan
2. Accurately place, carve and finish typodont restorations
3. Accurately place, carve and finish restorations on clinical patients
4. Understand and demonstrate restorative care and anesthesia for children

Diesel and Heavy Equipment

DS 154 - Heavy Duty Braking Systems

1-12 Credit(s)

Operation, diagnosis, testing, and repair of heavy-duty braking systems. Technical information and shop projects to apply and understand theories and principles include: fundamentals of braking - trucks/tractors; disk/cam brake systems; anti-lock air brake systems; heavy duty wedge brakes; power assist units; truck/tractor air brake system components; diesel engine brakes retarders; and preventive maintenance schedules and procedures in on and off the highway heavy-duty equipment.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Demonstrate customer relations' skills
2. Explain environmental awareness in the proper handling of petroleum products and related materials used to perform service and repair in the commercial transportation truck and heavy equipment industry
3. Identify and demonstrate the principles and operation of Brake Systems
4. Perform service and repair procedures on vehicles according to industry standards as they are used in the commercial transportation truck and heavy equipment industry
5. Demonstrate basic math skills using formulas to determine the following: Brake torque, system pressures, stopping distance, deceleration rates

DS 155 - Heavy Equipment Hydraulics

1-12 Credit(s)

This course covers technical information and shop projects necessary for the practical application and understanding of theories and principals used in the

operation, diagnosis, testing, failure analysis and repair of mobile and stationary hydraulic systems. This includes the following technical information and shop projects to apply and understand theories and principles and applications: introduction to hydraulics; system components; reservoirs, seals, filters, pumps, accumulators, oil coolers, pressure, flow and directional control valves, linear and rotary actuators, connectors, conductors, circuits, ANSI and ISO symbols and schematics, electronically controlled hydraulic systems, pilot controlled hydraulic systems, manually controlled hydraulic systems.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Demonstrate customer relations' skills
2. Explain environmental awareness in the proper handling of petroleum products and related materials used to perform service and repair in the commercial transportation truck and heavy equipment industry
3. Identify and demonstrate the principles and operation of Hydraulic Systems
4. Perform service and repair procedures on vehicles according to industry standards as they are used in the commercial transportation truck and heavy equipment industry
5. Demonstrate basic math skills using formulas to determine the following: Force, pressure, area, and flow rate

DS 158 - Heavy Equipment Chassis and Power Trains

1-12 Credit(s)

Operation, diagnosing, testing, and repair of heavy equipment chassis and power trains. Technical information and shop projects to apply and understand theories and principles include: frames; suspensions; conventional steering systems; track-type undercarriages; final drives and steering mechanisms; clutches; torque converters; standard transmissions; on and off highway automatic/automated transmissions; powershift transmissions; drive lines; front- and rear-drive units (carriers); heavy duty tires, wheels, and rims; and wheel hubs, dead and live axles of on and off highway diesel equipment.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Demonstrate customer relations' skills
2. Explain environmental awareness in the proper handling of petroleum products and related materials used to perform service and repair in the commercial transportation truck and heavy equipment industry
3. Identify and demonstrate the principles and operation of Powertrains
4. Perform service and repair procedures on vehicles according to industry standards as they are used in the commercial transportation truck and heavy equipment industry
5. Demonstrate basic math skills using formulas to determine the following: Drive gear ratios

DS 256 - Diesel and Auxiliary Fuel Systems

1-12 Credit(s)

Operation, diagnosis, testing, and repair of diesel and auxiliary fuel systems. Technical information and shop projects to apply and understand theories and principles of L.P. gas fuel systems; diesel fuel systems including electronic diesel engine controls; and diesel engine performance analysis of on and off highway current model engines.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Demonstrate customer relations' skills
2. Explain environmental awareness in the proper handling of petroleum products and related materials used to perform service and repair in the commercial transportation truck and heavy equipment industry
3. Identify and demonstrate the principles and operation of Fuel Systems
4. Perform service and repair procedures on vehicles according to industry standards as they are used in the commercial transportation truck and heavy equipment industry
5. Demonstrate basic math skills using formulas to determine the following: Theoretical engine performance, engine torque, horsepower, cylinder pressure, volume

DS 257 - Diesel Electrical Systems

1-12 Credit(s)

This course covers technical information and shop projects necessary for the practical application and understanding of theories and principals used in the operation, diagnosis, testing, and repair of diesel electrical systems. This includes: electrical fundamentals and safety; operation and testing of; batteries and battery banks; alternators and charging systems; starters and starting systems; electrical circuits; wiring harnesses; electronic control systems; schematics and HVAC systems as they are used on heavy duty trucks and equipment.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Demonstrate customer relations' skills
2. Explain environmental awareness in the proper handling of petroleum products and related materials used to perform service and repair in the commercial transportation truck and heavy equipment industry
3. Identify and demonstrate the principles and operation of Electrical Systems, Heating Ventilation and Air Conditioning Systems
4. Perform service and repair procedures on vehicles according to industry standards as they are used in the commercial transportation truck and heavy equipment industry
5. Demonstrate basic math skills using formulas to determine the following: Electrical system circuit quantities, volts, amps and ohms

DS 259 - Diesel Engines and Engine Overhaul

1-12 Credit(s)

This course covers technical information and shop projects necessary for the practical application and understanding of theories and principals used in the operation, diagnosing, testing, and repair of diesel engines and engine overhaul. This includes: development of the diesel engine; diesel engine operating principles; combustion chamber design and function; the cylinder block; cylinder head and components; crankshaft, main bearings, vibration damper and flywheel; pistons, rings, and connecting rod assembly; camshaft and timing gear train; lubrication systems, lube oil and controls; cooling systems, coolant and controls; air intake systems; exhaust systems and emission control systems; hand tools used in the disassembly, reassembly, diagnosis; and troubleshooting of diesel engines as they are used in heavy duty trucks and equipment.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Demonstrate customer relations' skills
2. Explain environmental awareness in the proper handling of petroleum products and related materials used to perform service and repair in the commercial transportation truck and heavy equipment industry
3. Identify and demonstrate the principles and operation of Internal Combustion Engines
4. Perform service and repair procedures on vehicles according to industry standards as they are used in the commercial transportation truck and heavy equipment industry
5. Demonstrate basic math skills using formulas to determine the following: Theoretical engine performance, engine torque, horsepower, cylinder pressure and volume

Drafting

DRF 121 - Mechanical Drafting

4 Credit(s)

An introduction to the ASME Y14.5 Dimensioning and Tolerancing standard. Develops basic skills in mechanical drafting, including dimensioning, section, and auxiliary views. Students will improve drafting quality and develop drawing production speed.

Prerequisite: DRF 160.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Be familiar with dimensioning standards set forth in ASME Y14.5
2. Be able to apply standard rules of dimensioning
3. Be able to create simple section views and auxiliary views
4. Be able to draw and specify common threaded fasteners in simplified form
5. Understand elements of professional-looking mechanical drawings
6. Increase rate of speed in creating accurate drawings

DRF 137 - Architectural Plans

4 Credit(s)

Fundamentals of building materials, construction techniques, and drawings used in residential structures.

Prerequisite: DRF 160.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Demonstrate ability to follow both national drawing standards and employer standards which differ from national standards.
2. Work from sketches and notes provided by others to create correctly finished drawings.
3. Research: Investigate codes and other requirements of local jurisdictions.
4. Solve simple design problems at a residential scale.
5. Demonstrate comfort with quantitative thinking.
6. Demonstrate understanding of residential construction materials and methods.
7. Demonstrate knowledge of architectural drawing standards and methods of sheet organization.

DRF 160 - Computer-Aided Drafting and Design

4 Credit(s)

In this course students use AutoCAD or equivalent computer-aided drafting software to create drawings. Students will learn to draw, modify, apply text and dimensioning, create and use hatch patterns, set up drawing layouts, plot, create and use blocks and attributes, and insert external references.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Use computer-aided drafting software to create working drawings.
2. Demonstrate ability to set up new drawing files independently, including layers, text and dimension styles, viewports, scales, sheet layouts, and plot setup.
3. Demonstrate ability to execute commands using a variety of input methods, including keyboard commands, keyboard shortcuts, icons, and right-click menus.
4. Demonstrate ability to select the most efficient methods of using and working in CAD software.

DRF 203 - Electrical Drafting

2 Credit(s)

Drafting techniques required for electrical and electronic fields. Schematics, wiring and routing diagrams, logic and printed circuit layout design and drawings.

Prerequisite: DRF 160

Learning Outcomes

Students who successfully complete this course will be able to:

1. Demonstrate familiarity with concepts and vocabulary. Describe functions of basic electrical attributes through worksheets
2. Demonstrate ability to calculate unknown electrical values from given values on worksheets
3. Identify basic electrical, electronics, and logic symbols using worksheets. Apply these symbols by creating schematic drawings
4. Demonstrate an understanding of the logic of motor control circuits and how they function by creating ladder diagram drawings to control motor operation
5. Describe basic concepts of power generation and demonstrate understanding through worksheets

DRF 205 - Drafting: Structures

4 Credit(s)

Graphical methods to investigate forces applied to rigid bodies at rest, including beams and trusses. The course covers vectors, moment, equilibrium, and the construction of load, shear, and moments diagrams for simple beams. Students will use CAD for graphical solutions; students without CAD skills who are able to use trigonometry for problem-solving may also enroll in this class.

Prerequisite: DRF 160, MTH 075 (or higher algebra), and MTH 085 (or higher geometry) or instructor consent.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Understand basic concepts of external forces and moments
2. Use graphical and analytical methods to add vectors
3. Understand and apply principles of equilibrium
4. Analyze forces in parts of a truss
5. Create beam load, shear, and moment diagrams

6. Be familiar with types of structures
7. Understand how various types of structures carry loads

DRF 207 - Drafting: Strength of Materials

4 Credit(s)

Stresses and strains that occur within bodies; material properties including elasticity; shape properties including centroids, moments of inertia, and section modulus; flexural stress in beams; and buckling in columns.

Prerequisite: DRF 205

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Understand basic concepts of internal stresses.
2. Solve for stress, force, or area when other 2 are known.
3. Understand basic concepts of material properties.
4. Use strain equations to solve for strain, deformation, length, stress.
5. Calculate expansion due to temperature change.
6. Be familiar with basic concepts of metallurgy.
7. Use modulus of elasticity to solve for variety of unknowns.
8. Calculate centroids for planar shapes and centers of gravity for three-dimensional shapes.
9. Use moment of inertia and section modulus to analyze flexural stress in simple beams.
10. Select appropriate beam members for a given load.
11. Calculate deflection of a given beam under a given load.
12. Select column members adequate to resist buckling.

DRF 210 - Commercial Buildings

4 Credit(s)

Fundamentals of building materials, construction techniques, construction documents, and processes used in commercial structures.

Prerequisite: DRF 160.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Demonstrate ability to follow both national drawing standards and employer standards which differ from national standards.
2. Demonstrate understanding of contracting and project delivery process.
3. Demonstrate understanding of and competence in project management and scheduling.
4. Demonstrate knowledge of standards for construction documents including drawing standards, specifications, and CSI systems.
5. Demonstrate comfort with quantitative thinking.
6. Demonstrate ability to work collaboratively using group processes to plan and solve problems.

DRF 211 - Sustainable Building Systems

4 Credit(s)

Fundamental principles of mechanical systems used in high-performance or green buildings including energy, water, lighting, heating, ventilation, and air conditioning.

Prerequisite: WR 115 or higher or by placement

Learning Outcomes

Students who successfully complete this course will be able to:

1. Be able to describe basic concepts and underlying principles of green building design, operation, and certification systems such as LEED
2. Understand how regional differences and local microclimates affect siting and design of buildings
3. Understand fundamental principles of conventional and renewable energy generation
4. Understand fundamental principles of heat transfer and thermal comfort
5. Be able to describe principles and basic operation of passive heating, passive cooling, and daylighting systems
6. Be able to describe principles and basic operation of water supply, stormwater, and wastewater systems
7. Demonstrate an ability to conduct research, evaluate sources, and communicate findings with others

DRF 220 - Building Information Modeling

4 Credit(s)

An introduction to Autodesk Revit 2021 that will allow students to gain an understanding of this BIM software and its application within the fields of Architecture and Structural Engineering. Activities in this class will include creating 3D building models along with their corresponding elevations, sections and details.

This class will navigate the Revit interface, sheet setup, inserting families, setting levels, annotations, dimensions and plotting.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Navigate the Revit software interface
2. Create 2D sketches and apply constraints and dimensions
3. Create a building in Revit and generate details
4. Create families and understand parametric constraints
5. Identify construction documents and their required elements

DRF 235 - Mechanical Design Skills

4 Credit(s)

In this class students develop skills used to create mechanical working drawings including applying tolerances, creating assembly drawings, understanding manufacturing methods, finding technical information, and solving problems.

Prerequisite: DRF 121.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Demonstrate ability to follow both national drawing standards and employer standards which differ from national standards.
2. Develop ability to visualize 3D object from 2D drawing; visualize multiple viewing directions; and translate 3D object into 2D drawing.
3. Demonstrate familiarity with materials, methods, and vocabulary of fabrication, machining, and other processes.
4. Demonstrate understanding of reasons for tolerances; be able to select appropriate tolerance ranges for surface finishes and clearances and fits.
5. Demonstrate understanding of basic principles of geometric dimensioning and tolerancing: basic dimensions, MMC, datums, flatness, angularity, position, and runout.
6. Develop basic measurement and reverse-engineering skills.
7. Understand reasons for and principles of basic document control procedures.
8. Work methodically from redline drawings supplied by others
9. Demonstrate comfort with quantitative thinking.
10. When faced with a design problem, research ways similar problems have been solved by others.
11. Solve design problems at a technician or paraprofessional level.

DRF 236 - Machine Elements

4 Credit(s)

A study of components used in machine design including materials, weldments, fasteners, keys, linkages, gears, roller chain, and V-belt drives.

Prerequisite: DRF 121.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Demonstrate familiarity with materials: Metal Thermoplastic Structural steel.
2. Select appropriate weld types for given connections and apply weld symbols correctly.
3. Demonstrate knowledge of standards for threaded and nonthreaded fasteners.
4. Use tables and handbooks to find design data.
5. Find dimensions and other data for fasteners.
6. Find dimensions and other data for keys and keyways.
7. Find V-belt and roller chain design data.
8. Translate design concepts into virtual and physical models, building neural links between mental concepts and physical reality and developing visualization skills.
9. Demonstrate understanding of cam and linkage kinematics.
10. Demonstrate knowledge of gear geometry and gear train types.
11. Demonstrate comfort with quantitative thinking: Gears V-belt and roller chain drives.
12. Demonstrate basic understanding of mechanisms.
13. Demonstrate and apply knowledge of OSHA requirements for guarding when faced with a guard design problem, research ways similar problems have been solved by others.

DRF 245 - Solid Modeling

4 Credit(s)

In this course students use solid modeling software to create and edit part and assembly models. Students will create sketched features, add placed features to parts, learn basic assembly modeling and create parts lists.

Prerequisite: DRF 160.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Demonstrate understanding of the concepts of parametric, feature-based solid modeling.
2. Use solid modeling software to create parts and assemblies.
3. Demonstrate an understanding of the use of constraints in creating parts and assemblies.
4. Demonstrate ability to create and print drawing views.

DRF 248 - Hydraulics Drafting

1 Credit(s)

This course provides a basic understanding of the principles of fluid power, introduces hydraulic and pneumatic components, develops familiarity with symbols used in schematic drawings, and develops skills in creating hydraulic and pneumatic schematic drawings.

Prerequisite: DRF 160

Learning Outcomes

Students who successfully complete this course will be able to:

1. Describe basic concepts of fluid power and demonstrate understanding through worksheets
2. Demonstrate ability to calculate how much a hydraulic system multiplies force from a given pressure and cylinder size, using worksheets
3. Identify and demonstrate understanding of the meaning of hydraulic and pneumatic symbols through worksheets
4. Apply understanding of hydraulic and pneumatic symbols by creating schematic drawings

Early Childhood Education

ECE 105 - Health and Safety Issues in Early Childhood Education

2 Credit(s)

Introduction to health and safety practices in early childhood education environments for children 6 weeks through 6 years. Students will learn to guide children's understanding of health and safety through developmentally appropriate practices. Recognizing/Reporting Child Abuse/Neglect required to pass.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Demonstrate techniques that prevent infection and injuries in the child care setting for children of all abilities
2. Evaluate emergency situations in the child care setting for children of all abilities
3. Value concepts of healthy childhood habits for children of all abilities
4. Analyze concepts of recognizing and reporting child abuse
5. Organize children's learning of health and safety in the child care setting using developmentally appropriate practices

ECE 110 - Observing Young Children's Behavior

1 Credit(s)

Study of objective techniques for observing and recording children's behavior. Beginning connections between observing, curriculum planning and assessment will be introduced. Observations of preschool age children are assigned as homework.

Prerequisite: WR 115 is recommended.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Carry out and record the details of objective observations for a variety of purposes
2. Demonstrate a better understanding of children's behavior through direct observations
3. Use observation skills to evaluate the growth and behavior of young children
4. Explain various types of observational techniques and the values of each

ECE 120 - Introduction to Early Childhood

2 Credit(s)

Course is designed to give an overview of the field of early childhood education. It explores career options, types of programs, history, advocacy and personal qualities of successful child care professionals.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Describe and understand some of the characteristics of the person who works successfully with young children.
2. Describe and understand the general characteristics, qualities and philosophies of different types of programs for preschool aged children.
3. Describe Developmentally Appropriate Practice and quality indicators.
4. Describe what a philosophy of early childhood education is made up of and identify several elements of philosophy in local Early Childhood Education centers.
5. Describe the benefits of play for young children.
6. Describe how to set up an Early Childhood classroom environment.
7. Describe the long term benefits of preschool education.
8. Describe and understand the historical background of early education for young children and demonstrate a basic understanding of major theorists who contributed to the growth of the field.
9. Describe and understand the importance of an inclusive environment in an early childhood classroom and the kinds of special needs and laws that are addressed in such an environment.
10. Describe and understand the importance of being a professional in the Early Childhood field.
11. Demonstrate the ability to use the National Association for the Education of Young Children's Code of Ethics and state some of the ethical issues related to the education of young children.
12. Describe and understand some of the major trends in the field of early childhood education.

ECE 130 - Guidance of Young Children

3 Credit(s)

Acquaints student with the logic and ethics of developmentally appropriate guidance of children aged birth through five years. Focuses on guidance, social and emotional behavior patterns, daily routines. May be offered online.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Explain the difference between constructive guidance and punishment
2. Choose developmentally appropriate guidance techniques to promote moral autonomy in young children
3. Evaluate parenting and teaching styles through the study of behaviorism, constructivism, and maturationism
4. Describe reasonable and developmentally appropriate expectations for children considering age, stage, and temperament

ECE 150 - Creative Activities for Children

3 Credit(s)

Introduces students to creative activities suitable for preschool children: art, children's literature and storytelling, music, rhythms, games, finger-plays, and dramatic play. Development of the student's creative imagination will be stressed. Lectures and demonstrations are combined with experiences in the use of various media.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Choose developmentally appropriate ways to foster creative expression, including the concept of aesthetics, for preschool age children
2. Identify and demonstrate creative expression through art for early childhood
3. Identify and practice developmentally appropriate ways to promote early literacy
4. Identify and demonstrate creative expression through music, movement and games
5. Identify and demonstrate creative expression through dramatic play, blocks and cooking activities

ECE 160 - Exploring Early Childhood Curriculum

4 Credit(s)

Students will gain understanding in planning daily and weekly program activities for young children. There is an emphasis on planning developmentally appropriate, play-based experiences based on observation of children and knowledge of early childhood learning strategies. Students will study types and benefits of play as the basis of curriculum planning.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Examine developmental learning theories and reflect upon their implementation in guiding children's development.

2. Explore basic principles within a play-based, emergent approach to curriculum planning.
3. To explain the philosophy and practice of a constructivist, Reggio inspired approach to curriculum planning.
4. Identify stages of play and summarize their specific characteristics.
5. Develop appropriate goals and developmental objectives for preschool children and programs based on observation.
6. Plan a curriculum including specific kinds of learning opportunities based on a developmental model of early education.

ECE 170 - Infants and Toddlers Development

4 Credit(s)

The course is designed to examine the growth and development of infants and toddlers. Practical areas of care will include: safety, health, nutrition, sleep, and toilet learning.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Identify specific developmental stages and issues as related to the newborn.
2. Identify developmental characteristics and developmental needs of infants and toddlers in the areas of physical, intellectual, emotional, social and language development.
3. Define technical terms related to infant and toddler development.
4. Select proper care techniques for infants and toddlers at different developmental levels.
5. Safety, health, sleep, feeding and toilet training issues are discussed.
- 6.. Describe parent/caregiver roles in caring for and nurturing infants and toddlers

ECE 210 - Applying Early Childhood Curriculum

4 Credit(s)

Study of best practices and a Reggio-inspired approach to early childhood education. There is an emphasis on the design of the environment as the "third teacher", including the development of inquiry-based STEM (science, technology, engineering, and math) activities as well as the outdoor environment.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. To develop appropriate goals for preschool children and programs based on observation.
2. To plan a curriculum including specific kinds of learning opportunities based on a developmental model of early education.
3. To construct teaching materials supporting specific methods and plans.
4. To analyze one's own teaching experience and goals, then match planning to philosophy of teaching and educational practice.
5. To explore a variety of STEM teaching methods and goals for young children.
6. To summarize and explore basic outdoor children's games.

ECE 230 - Family, School, Community Relations

3 Credit(s)

Designed to help the student understand and develop methods and procedures for fostering effective family, school and community relations. Topics include: development of methods and techniques in preparation for and delivery of a parent conference, understanding how community agencies can best serve parents and children in relation to school programs, and practical experience in developing communication skills with parents.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Comprehend the value of and goals for involving parents in early education programs.
2. Develop comprehensive communication skills, both written and oral.
3. Develop a deeper understanding of parent/family needs and how the child care teacher/Center can help meet those needs.
4. Explore various types of parent meetings and family/parent involvement.
5. Comprehend the value of school policies & regulations.
6. Develop an understanding of how to plan for and carry out an effective, developmentally appropriate parent conference.

ECE 240 - Supervised Student Teaching

4 Credit(s)

Designed to provide the student with actual experience in the supervision, guidance, and care of young children based on NAEYC standards for Early Childhood Professional Preparation. Students learn to demonstrate consistent appropriate guidance and plan and carry out a developmentally appropriate curriculum. Verification of MMR (Measles, Mumps, Rubella) vaccine

documentation is required.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Choose effective positive guidance techniques to use with a variety of children
2. Use observations to assess the progress of young children and propose emergent curriculum plans to support learning
3. Analyze (and apply when appropriate) elements required in creating a successful Circle Time with young children
4. Evaluate (and implement when appropriate) small group activities and learning centers that promote playful inquiry and discovery

ECE 250 - Infant and Toddler Environments

3 Credit(s)

Course topics include: How suitable materials and a carefully planned physical environment can enhance optimum development. How to staff a center appropriately. Develop a brief review of infant-toddler development. Basic care giving techniques. How to plan curriculum and resources and references.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Choose suitable equipment and materials for infants and toddlers.
2. Plan quality, and developmentally appropriate environments for infants and toddlers.
3. Identify state rules and regulations which govern the certification of infant and toddler centers.
4. Discuss competencies for caregivers in quality infant and toddler programs.
5. Demonstrate an understanding of infant and toddler learning by planning curriculum, based on observation, for this age child.

ECE 253 - Diversity Issues in Early Childhood Education

3 Credit(s)

This course explores the concept of human diversity in early childhood settings. It will specifically include an awareness and appreciation of issues of ability, belief, class, culture, gender, language, race, and family experiences as they affect the development of young children and their families. Students will also evaluate and develop appropriate materials and methods to increase children's awareness and appreciation of diversity.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Explore and construct a new appreciation for diversity
2. To explore child development principles in a cultural context
3. Understand the effects of bias on the child and family
4. Develop culturally-appropriate learning materials for young children

ECE 260 - Administration of Child Care Programs

3 Credit(s)

An overview of administrative management issues in the establishment and operation of child care programs. Overall program planning, organizational structure, budgeting, personnel management and legal aspects of child care, including Oregon state licensing rules.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Describe and explain program planning concepts in child care settings
2. Identify organizational structures of child care settings
3. Evaluate budgeting systems in the child care setting
4. Analyze personnel management issues
5. Describe and understand legal issues of child care settings

Earth and Environmental Sciences

ENSC 181 - Terrestrial Environment

4 Credit(s)

Interactions among humans and natural land-based systems and their environmental consequences. Topics and labs include land-based ecology, biodiversity, biomes, forests, agriculture, rangelands, soils, groundwater, geologic mineral and energy resources, mining, waste management, recycling, environmental justice, ecological economics, conservation, and sustainable production. Take ENSC 181-183 in any order. Lab included.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Evaluate and perform scientific procedures and methods.
2. Evaluate interactions among humans and natural land-based systems and their environmental consequences in case studies.

3. Describe terrestrial ecology, biomes, and biodiversity and explain the biological, geologic, chemical and physical interactions of their components.
4. Describe benefits and drawbacks of practices in forests, agriculture, rangelands, soils, groundwater use, mining, conservation, and waste management.
5. Describe methods of mineral and energy resources extraction and their environmental consequences and mitigation and evaluate the human benefits and consequences of their extraction and use.
6. Evaluate environmental justice, ecological economics, and sustainable production.

ENSC 182 - Atmospheric Environment and Climate Change

4 Credit(s)

Causes, consequences, geologic history and science of climate change and atmosphere. Topics and labs include weather, sun-Earth cycles, air pollution, ozone layer, greenhouse effect, ocean/atmosphere/ice systems, climate models and data, predictions, feedbacks, tipping points, carbon sequestration, energy options. Lab included.

Prerequisite: Recommended: G 102 or GEOG 141

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Evaluate and perform scientific procedures and methods. Make detailed observations, gathering and assessing information, formulating hypotheses, and thinking creatively about weather, atmospheric chemistry and climate variables and climate changes over time
2. Interpret and compare some basic characteristics of the atmosphere and processes that influence weather and climate
3. Conduct experiments and make measurements of atmospheric variables such as temperature, pressure, relative humidity and calculate or estimate other atmospheric variables from these
4. Summarize weather hazards and compare their effects on advantaged and disadvantaged human populations
5. Describe the natural and "enhanced" greenhouse effect and its causes
6. Predict potential consequences of global warming to ecologic, hydrologic, marine, meteorological, and human systems
7. Analyze the complexity of the Earth's climate system including the carbon cycle and explain many of its feedbacks and the possibility of tipping points
8. Describe and analyze the varied evidence for past climate change and assess the reliability and range of error of these data
9. Evaluate her or his contribution to climate change and personal role in mitigating that contribution
10. Apply analysis of methods of climate stabilization wedges, carbon sequestration and carbon accounting to assess the potential for easing the collective effect of humans on the climate
11. Explain the chemistry of the ozone layer and its depletion and analyze the possible consequences of increasing ozone-destroying gases in the atmosphere
12. Distinguish the greenhouse effect and ozone depletion from each other, and elucidate their commonalities

ENSC 183 - Aquatic Environment

4 Credit(s)

Students learn about freshwater and marine systems including their biology, geology, chemistry, circulation, climate and interactions with humans. Topics and labs include aquatic biodiversity, streams, water pollution, ocean currents, fisheries, sustaining aquatic systems and water resources. Take ENSC 181-183 in any order. Lab included.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Evaluate and perform scientific procedures and methods.
2. Demonstrate and describe key chemical and physical properties of water.
3. Evaluate major environmental threats to, mitigation of and adaptation to change in freshwater and marine systems related to pollution, fisheries collapse, water shortages, and/or effects of climate change. Explore social justice issues associated with these problems.
4. Research the global importance of aquatic biodiversity and ongoing conservation efforts.
5. Develop hypotheses and collect field data to study physical parameters including dissolved oxygen, nutrients, pH, and turbidity, and to study life in aquatic ecosystems.

6. Demonstrate critical thinking skills by gathering and assessing information about current environmental issues and sustainability related to aquatic ecosystems and water resources conservation.

ENSC 265 - Environmental Science Field Methods

4 Credit(s)

Students will gain practical field experience, with online and face-to-face instruction, using protocols to collect scientific environmental data, particularly in wetlands, and on endangered, threatened, and invasive species in various environmental settings. Students also explore monitoring, mitigation, and restoration in these areas. They will work side by side with collaborating resource professionals. One of the following courses is recommended to be taken prior to this class: BI 103F, BI 103J, ENSC 181, BI 213B, or WST 230.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Describe and classify wetlands, invasive and threatened and endangered (T & E) species by ecological criteria and observed conditions including hydro-geomorphology, using scientific protocols
2. Describe wetlands' ecosystem services and the impacts of invasive species
3. Infer important hydrological processes acting at a particular site, based on site observations including infiltration, evapotranspiration, soil water storage, drainage, and seasonal water budget
4. From direct observations, infer mechanisms for presence of wetland, invasive and T and E species on site, and form testable hypotheses
5. With the aid of direct observations, explain the role of soil and vegetation in the management and quality of water on a wetland site
6. Implement basic field standards, including use of field and mathematical skills, tools, and interpretation of measurements fundamental to watersheds in the performance of T-&E, wetlands and invasive-species surveys and assessment
7. Summarize best management practices commonly used to conserve T & E species and designate critical habitat, to assess invasive and wetland species and habitat, including communicating clearly with peers
8. Effectively utilize appropriate library and other information resources to research professional issues and support lifelong learning and job advancement
9. Analyze data and draw supportable conclusions regarding Earth's interconnected systems in wetlands
10. Provide an interdisciplinary perspective that builds understanding of wetland-related sustainable ecological, social, and economic systems, concern for environmental justice, and the competence to act on such knowledge
11. Describe the dynamic nature of wetland and ecological systems, and human interactions with those systems in environmental science and ecology

Economics

ECON 200 - Principles of Economics: Introduction to Economics

3 Credit(s)

First term of a three-term sequence in principles of economics. Introduces the basic economic concepts of scarcity, choice production possibilities, and market operations. Also includes economic measurements, and the circular flow of income, and the role of government.

Prerequisite: Recommended: MTH 111 and sophomore standing

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior: Identify universal scarcity and the resulting opportunity costs that impact human behavior. Relate this to problems of a market economy, supply and demand, price controls, business cycles and much more
2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live: Analyze what it means to think economically" and how that results in divergent and sometimes contradictory policy dependent upon the social context and parameters within which issues arise. Begin to learn to apply these economic methodology on an individual as well as societal basis

ECON 201 - Principles of Economics: Introduction to Microeconomics

3 Credit(s)

Second term of a three-term sequence in principles of economics. A study of basic microeconomics including elasticity, profits the operations of the four market structures, government policies toward business, and resource markets.

Prerequisite: ECON 200 or ECON 202. Recommended: MTH 111 and one year of college coursework completed

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior: Continue to recognize and analyze microeconomic frontiers explored in Econ 200. Emphasize both explicit and implicit costs in the context of readily identifiable (and measurable) costs. Also acquire and hone skills necessary to analyze those less easily quantifiable costs of decision making inherent to the human experience
2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live: Appreciate the wide array of motivations that drive an individual, corporate, and/or social construct to maximize profit. Continue to analyze what it means to think economically" and how that results in divergent and sometimes contradictory policy dependent upon the social context and parameters within which issues arise. Begin to learn to apply these economic methodologies on an individual as well as societal basis

ECON 202 - Principles of Economics: Introduction to Macroeconomics

3 Credit(s)

Third term of three-term sequence in principles of economics. Study of basic macroeconomics including alternative macroeconomic models of the level of economic activity, money and banking, fiscal policy and monetary policy.

Prerequisite: ECON 200 or ECON 201. Recommended: MTH 111 and one year of college coursework completed

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior: Analyze impacts of business cycles, forecasting and monetary policies from mathematical, graphical, and logical perspectives. Apply these analyses to social/political/economic trends and consider their impact upon human behavior and motivation in the past and present
2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live: Use economic approaches and reasoning gained throughout the term (as well as prior terms of economics principles) to better understand, appreciate (and accept) the diversity of opinion and approach that exist regarding macroeconomic problems and concerns
3. Understand the role of individuals and institutions within the context of society: Course will examine the macroeconomic impact of top-down and bottom-up movements expressed via established institutional structures as well as grass-roots political and social movements
4. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry: Examine, identify and assess macro-economic theories and approaches from the perspectives of both liberal and conservative ideologies. Develop skills necessary to recognize potential pitfalls to clear and reasoned thinking
5. Utilize appropriate information literacy skills in written and oral communication: Weekly in class and/or online forum discussions and required graded written analysis of a wide range of relevant topics is designed and intended to hone communication skills
6. Understand the diversity of human experience and thought, individually and collectively: Examine the historic origins of current schools of economic thought as well as the origins and evolution of current economic systems. Be familiar with the processes by which individuals and peoples change within an economic context over time
7. Apply knowledge and skills to contemporary problems and issues: Consider macro-economic case studies of current economic and socio-economic problems and dilemmas. Identify potential opportunities for positive change within current macro-economic frameworks as well as consider future macro-economic issues and how to resolve them by means of fundamental economic tools and strategies acquired throughout the course of this and previous terms

ECON 204 - Introduction to International Economics

4 Credit(s)

Introduces principles of international development, trade, and finance. Topics include: history of international development, comparative advantage, free trade, international trade agreements, international economic institutions, exchange rates. Labor and capital migration are covered, time permitting.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior: Identify, apply, and discuss standard and alternative economic analytical methods to evaluate international economic development and international trade,

including, statistical analysis, economic modeling, historical analysis, survey analysis.

2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live: Identify, explain, and discuss comparative economic history among a wide range of nations; Identify, explain, and discuss comparative economic development among a wide range of nations; Identify, explain, and discuss comparative trade policies among a wide range of nations.
3. Understand the role of individuals and institutions within the context of society: Evaluate and explain the history and role of international economic institutions: IMF, WTO, World Bank; Evaluate and explain policy regimes of international economic institutions: IMF, WTO, World Bank; Evaluate and explain absolute advantage, comparative advantage, mercantilism, protectionism, free trade.
4. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry: Compare and Contrast alternative economic frameworks; Compare and contrast alternative theories of economic development; Compare and contrast alternative theories of international trade; Evaluate and explain absolute advantage, comparative advantage, mercantilism, protectionism, free trade.
5. Utilize appropriate information literacy skills in written and oral communication. Evaluate information and its source critically; Understand many of the economic, legal and social issues surrounding the use of information; Evaluation and selection of information using appropriate criteria: Compare and Contrast alternative economic frameworks; Compare and contrast alternative theories of economic development; Compare and contrast alternative theories of international trade; Evaluate and explain absolute advantage, comparative advantage, mercantilism, protectionism, free trade.
6. Understand the diversity of human experience and thought, individually and collectively: Identify, explain, and discuss comparative economic history among a wide range of nations; Identify, explain, and discuss comparative economic development among a wide range of nations; Identify, explain, and discuss comparative trade policies among nations.

ECON 260 - Introduction to Environmental and Natural Resource Economics

4 Credit(s)

This course introduces the fundamental economic concepts, methods, and policy options used to analyze the interaction between the economy and the natural environment, including natural resources. Major topics covered include the economics of: pollution and environmental protection; resource extraction and depletion; externalities and public goods; and sustainability and resilience.

Methods of economic analysis introduced include: cost-benefit analysis; valuation of environmental services, and impact analysis. Policy options considered include: property rights, effluent controls, emission charges, tradable pollution permits, and regulatory restrictions.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior: Apply scientific, economic analytical methods to evaluate the inter-relationship between the economy and the natural environment, including natural resources; Analyze and assess public policy options and outcomes as related to environmental issues including pollution and resource use; Analytical methods include: benefit-cost analysis, valuation, discounting, precautionary rules, impact analysis
2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live: Identifies and incorporates multi-disciplinary contributions to the economic study of the natural environment from the fields of physics, engineering, biology, ethics, law, and ecology; Topics will focus on issues affecting the Northwest: salmon recovery, forestry management practices, dam-breaching, wetlands protection, water quality, water management
3. Understand the role of individuals and institutions within the context of society. Evaluate and explain the inter-relationship between the economy and the natural environment, including natural resources. Evaluate and explain the relationship between inter-generational and intra-generational equity issues with respect to pollution, resource use, depletion, sustainability. Evaluate and explain the role of market, regulatory, legislative, and judicial oversight of economic and environmental activities
4. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry. Compare and contrast contrary interpretations of efficient market theory, market failure. Compare and contrast the

contributions to environmental economic analysis from physics, engineering, biology, ethics, law, and ecology. Evaluate various standard economic modeling methods

5. Utilize appropriate information literacy skills in written and oral communication. Formulate a problem statement. Determine the nature and extent of the information needed to address the problem. Evaluate information and its source critically; and understand many of the economic, legal and social issues surrounding the use of information. Apply scientific, economic analytical methods to evaluate the inter-relationship between the economy and the natural. Analytical methods include: benefit-cost analysis, valuation, discounting, precautionary rules, impact analysis. Compare and contrast contrary interpretations of efficient market theory, market failure. Compare and contrast the contributions to environmental economic analysis from physics, engineering, biology, ethics, law, and ecology
6. Understand the diversity of human experience and thought, individually and collectively. Identifies and discusses wide range of individual contributors to the development of Environmental Economics
7. Apply knowledge and skills to contemporary problems and issues. Assess issues affecting the Northwest: salmon recovery, forestry management practices, dam-breaching, wetlands protection, water quality, water management. Assess policy options including: property rights; effluent controls; emission charges; pollution permits; simulated markets; and regulatory restrictions on resource extraction

Education

ED 100 - Introduction to Education

3 Credit(s)

This course provides an overview of the Education field for those considering a career in teaching. Students will explore the classroom community, human development as a basis for the acquisition of knowledge, culturally responsive teaching practices, and engage in a research project studying a current issue in education. Course also includes an in-class observation.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Demonstrate their individual characteristics in relation to classmates and
2. Recognize another culture, and point of view of schooling.
3. Identify major educational landmarks affecting marginalized groups in the U.S.

ED 125 - Tutor Training 1

1 Credit(s)

This class is the first of three levels of College Reading and Learning Association's (CRLA) certified tutor training. The content includes communication, tutoring techniques, and problem solving. Students learn how to facilitate learning. The teaching format is interactive with tutors supplying their own answers and teaching each other. Upon completion, tutors achieve Regular/Level I certification from the College Reading and Learning Association (CRLA).

Prerequisite: Employment as a tutor.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Think critically by examining your own and students' learning styles and applying appropriate strategies to assist individual learners
2. Think critically by evaluating students' needs and refer to other locations on campus when needed
3. Engage with civic and ethical awareness by recognizing personal values while exploring others' perspectives through defining differences in your own and students' goals/values/cultural behaviors
4. Engage with civic and ethical awareness by gaining sensitivity into the way students feel about asking for help
5. Create a safe environment for students facing errors and obstacles in coursework by identifying students' and tutors' rights and responsibilities
6. Create a safe environment for students by articulating and modeling goal setting and growth mindset to encourage persistence
7. Communicate effectively by crafting clear messages both verbally and non-verbally within the cultural context by evaluating and improving your personal listening and communication skills
8. Communicate effectively by identifying questioning criteria and skills to reflect Bloom's Taxonomy
9. Apply earning and leading effective tutor sessions by applying emotional intelligence
10. Apply learning in above theories and practice consistently in life and tutoring by collectively solving current problems identified by tutors

ED 126 - Tutor Certification - Advanced

1 Credit(s)

This class is designed for current LCC tutors with some experience. The content will deepen in the areas of learning facilitation, communication, and cultural competence as it relates to tutoring and life. The teaching format is interactive with tutors teaching and learning collaboratively. Upon completion, tutors achieve Advanced/Level II certification from the College Reading and Learning Association (CRLA).

Prerequisite: Continued employment as a tutor and completion of ED 125

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Think critically by identifying the problem a student is having with the specific subject material, using the Socratic method
2. Think critically by combining previous learning from ED125 with new content explored
3. Engage with civic and ethical awareness by articulating the ways in which diverse values affect people, individual societies, and the global community accurately through identifying one's own biases and plan ways to avoid them
4. Engage with civic and ethical awareness through defining white privilege and micro-aggressions and their impact on Lane students and in society
5. Create solutions in your work with students' learning preferences by exploring contradictory ideas through listing Howard Gardner's 8 multiple intelligences, and identify which ones relate to your and other students' personal learning styles
6. Create solutions in your work through evaluating the difference between a right-brain learner and a left-brain learner, for yourself and your students
7. Communicate effectively and honestly remaining open to alternative views through evaluating improved listening and communication habits and practices
8. Communicate effectively and honestly through identifying the inner voices that direct your actions
9. Apply learning consistently by demonstrating metacognition in tutoring through evaluating and improving your social awareness (Emotional Intelligence)
10. Apply learning consistently through solving current problems collectively as identified by tutors

ED 127 - Tutor Certification-Master Level

1 Credit(s)

This is the third and final level of the College Reading and Learning Association's (CRLA) certified tutor training. Tutors will gain skills in mentoring, teaching, leadership, and critical thinking. The teaching format allows tutors to individualize learning based on goals and needs through a project outside of class. Upon completion, tutors achieve Master/Level III certification from CRLA.

Prerequisite: Continued employment as a tutor and completion of ED 125 and ED 126

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Think critically by solving ongoing problems that arise while working with students and other tutors
2. Think critically by combining all learning from ED125 and ED126 and building a plan for a project
3. Engage with civic and ethical awareness by organizing, planning, and completing collaborative work toward a common goal through illustrating an understanding of group management skills
4. Engage with civic and ethical awareness by articulating a high quality lesson plan for teaching a skill or concept that includes all elements of all participants
5. Create an opportunity for maximum growth by experimenting with possibilities that embrace ambiguity and risk making mistakes through identifying and implementing a teaching or leadership goal
6. Create an opportunity for maximum growth by evaluating your own comfort zones and moving beyond them while consistently collaborating with others to achieve shared goals
7. Communicate effectively and consistently adapting to a specific audience and cultural context with an effective organizational strategy by delivering effective feedback to students, peers, and leaders or instructors
8. Communicate effectively and consistently by modeling positive listening and assertive communication skills
9. Communicate effectively by linking prior Emotional Intelligence coursework with Relationship Management
10. Apply learning by implementing complex skills, theories and methods across relevant disciplines and previous coursework to solve problems successfully that result in assisting students and new tutors utilizing best practices in tutoring

11. Apply learning by planning and executing an independent project with weekly goals and completions

ED 131 - Instructional Strategies in CTE

3 Credit(s)

This course provides students with instructional strategies that have a positive impact on secondary CTE student achievement. Principles based on instructional research, case studies, and classroom examples are provided to give learners tools to use in the CTE classroom.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Understand terminology and general principles of instruction and learning
2. Understand the research-based best practices of effective instructional design, delivery, and assessment in CTE
3. Use standards in the identification of instructional goals, activities to achieve goals through student learning, and appropriate measurement means for those goals
4. Plan CTE instruction at the lesson and unit levels to include differentiation and both formative and summative assessment
5. Apply the principles of culturally responsive teaching to instructional design, delivery, and assessment

ED 216 - Foundations of Education

3 Credit(s)

Analyzes the system of education in a democratic society. This course introduces the historical, social, philosophical, political, legal and economic foundations of education to provide a framework from which to analyze contemporary educational issues.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Analyze current issues in education through historical, sociological, political and philosophical lenses
2. Explain how educational systems prepare students to participate in thoughtful and democratic civic engagement
3. Summarize the various philosophies of education
4. Apply knowledge of the different education philosophers, past and present
5. Identify the roles, professional responsibilities and ethical expectations of teachers in today's schools, and link this to individual identity and career goals
6. Explain how educational systems incorporate or reflect socially constructed identities based upon perceived differences
7. Describe the diversity found in today's students and the impact of educational access and societal inequity on student learning
8. Create an education philosophy statement

ED 220 - Introduction to CTE

3 Credit(s)

This course is designed to support CTE educators who are pursuing CTE licensure in Oregon and/or desiring professional development. Supports those who are either new to the teaching profession or existing teachers adding an endorsement to teach in a career & technical education program of study. Students receive a practical introduction to the professional roles and responsibilities of educators, as well as an overview of the state and federal funding and program characteristics that support CTE in Oregon.

Learning Outcomes

Students who successfully complete this course will be:

1. Develop an awareness of the ethics, responsibilities, and professional practices required of CTE educators, including: student confidentiality, mandatory reporting, licensure and model core teaching standards
2. Demonstrate understanding of the intended premise for career and technical educators as defined by the Carl Perkins Act of 2018 and its implementation in Oregon, including providing equitable access to all students
3. Evaluate and apply the quality indicators for CTE programs of study and teacher practice that support quality teaching and learning

ED 230 - Language and Literacy

3 Credit(s)

Literacy is essential to learning. Understanding the process of literacy development in middle and high school prepares teachers to become better equipped at helping to improve literacy skills of students of all backgrounds. Students will review influential, popular and diverse works for adolescence. The culminating assignment includes the creation of a personal narrative, written to encompass components of story and theory behind the integration and use of first

person voice.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Understand the prerequisites and requirements for completing undergraduate and graduate degrees in education (K-5) or in subject areas (6-12) and how to pursue these degrees.
2. Determine both educational and career goals based upon self-assessment, interests, and skills as well as upon likely job openings in education.
3. Demonstrate skills in using technology both to learn and to teach.
4. Demonstrate improved writing and reading skills and the ability to teach others to write and to read with fluency.
5. Demonstrate an understanding of intrinsic motivation and how to nurture this through the use of precise praise.
6. Demonstrate an understanding of cultural diversity and how to support diverse students as a classroom teacher.

ED 233 - Adolescent Learning and Development

3 Credit(s)

Investigate the biological, theoretical and socioemotional underpinnings of adolescent development through theoretical perspectives. Gender, racial, cross-cultural, sexual orientation differences and commonalities as well as social class perspectives will be explored. These theories will be used as a lens to frame the issues faced by adolescents currently. This course is offered for those considering teaching in secondary education classrooms or those who intend to work with adolescents in other settings.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Specify the types of interactions under study that occur among individuals, groups, institutions, societies and/or the natural environment
2. Integrate the theory of Marcia's Identity Development with Cross' Theory of Racial Identity Development.
3. Describe and explain Bronfenbrenner's Ecological System Theory in your own words. Be inclusive of the terms used in the theory.

ED 258 - Multicultural Education

3 Credit(s)

This course addresses the background, philosophy, methods, and curriculum that develop a culturally responsive educational setting. This course will enable students to meet the needs of all students and families from a variety of diverse backgrounds. Areas of study include equity, diversity, and social justice as related to various aspects and to all levels of education.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Define and provide examples of culture and its components.
2. Explain the rationale for multicultural education.
3. Demonstrate techniques to incorporate multicultural education in the curriculum.
4. Demonstrate understanding of a minority culture.

ED 269 - Inclusion and Special Needs

3 Credit(s)

Course designed to deepen the understanding of the historical and cultural roots of individuals who have disabilities. Topics covered include an overview of laws impacting students and families. A special emphasis will be placed on the definitions and classifications, instructional models and responses to the exceptional student. The course focuses on the characteristics of students with special needs and the adaptation of teaching to meet these needs.

Learning Outcomes

Upon completion of this course the student will be able to:

1. Define current terminology and issues in the field of special education including inclusion as well as family and multicultural issues.
2. Identify and describe service delivery options for students with disabilities in the least restrictive environment (LRE).
3. Demonstrate effective communication skills and professional demeanor through a formal interview of an adult with a disability, parent of a child with a disability, or an adult service provider in the area of special education.

Effective Learning

EL 110 - Effective College Reading

1-3 Credit(s)

This course develops students' ability to monitor, apply and adjust a variety of reading strategies for increased comprehension of academic texts. It introduces discipline-specific study methods to help students successfully read course materials, think critically, navigate information technology in their subject area, and develop rich academic vocabulary.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Apply prior knowledge to aid in the integration and retention of new information.
2. Monitor and evaluate his/her growth as an active reader.
3. Apply appropriate reading strategies to college-level discipline-specific texts.
4. Vary reading strategies and reading rate according to the level of difficulty of the material.
5. Identify and use patterns of organizations in college-level material and other discipline-specific texts to aid in comprehension.
6. Employ various techniques to recognize, define, and use new or unfamiliar vocabulary to maximize reading comprehension and expand readers' vocabulary.
7. Evaluate author's credibility.
8. Organize and/or synthesize information from college-level reading materials into usable notes and/or study materials.
9. Mark text selectively, ask questions of the text, respond to the text, and summarize the text.

EL 113 - Connections: Specific Study Skills

3 Credit(s)

Students will develop and strengthen their critical reading, thinking, and writing skills. Together, EL113 and WR093 integrate these skills to prepare students for college-level writing.

Corequisite: WR 093

Learning Outcomes

Upon successful course completion, the student will:

1. Develop critical reading and thinking skills for academic success in writing within the context of a liberal education
2. Develop the ability to engage in and value a respectful and free exchange of ideas
3. Develop and apply a variety of reading strategies for college-level inquiry, learning, and thinking
4. Develop time management and goal setting strategies for successful college-level writing
5. Develop such critical thinking skills as synthesis and analysis as they pertain to writing
6. Develop information literacy skills required for college-level writing including locating, evaluating, and using source material (in print or online)

EL 115 - Effective Learning

3 Credit(s)

This course is designed for students who wish to strengthen their study skills and strategies. Students will learn how to take notes from lectures and textbooks, use their preferred learning styles, study for tests, improve memory, read and study from textbooks, manage time effectively, use the library, and make visual study tools. Coursework requires college-level reading skills.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Develop time management and goal setting strategies.
2. Demonstrate a variety of textbook reading strategies.
3. Generate notes in a variety of formats from diverse sources.
4. Locate and use basic resources in LCC Library.
5. Apply various memory techniques.
6. Employ exam preparation and exam taking techniques.
7. Monitor progress in strengthening study skills and strategies.

EL 115R - Critical Thinking for College Reading

3 Credit(s)

This course is designed for students who wish to strengthen their study skills and strategies. Students will learn how to take notes from lectures and textbooks, use their preferred learning styles, study for tests, improve memory, read and study from textbooks, manage time effectively, use the library, and make visual study tools. Coursework requires college-level reading skills.

Corequisite: RD 087.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Develop time management and goal setting strategies.
2. Demonstrate a variety of textbook reading strategies.
3. Generate notes in a variety of formats from diverse sources.
4. Locate and use basic resources in LCC Library.
5. Apply various memory techniques.
6. Employ exam preparation and exam taking techniques.
7. Monitor progress in strengthening study skills and strategies.

EL 116 - Critical Thinking for Paragraph Writing

3 Credit(s)

Students will develop and strengthen their critical reading, thinking, and writing skills. Together, EL116 and WR087 integrate these skills to prepare students for essay writing.

Corequisite: WR 087

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Use critical reading and thinking skills for academic success in writing within the context of a liberal education. Develop the ability to engage in and value a respectful and free exchange of ideas
2. Apply a variety of reading strategies for paragraph-level inquiry, learning and thinking
3. Use time management and goal setting strategies for successful paragraph writing and grammar improvement
4. Use critical thinking skills such as synthesis and analysis as they pertain to paragraph writing and grammar improvement
5. Identify and use information literacy skills in pre-college level writing including locating, evaluating and using source material (in print or online)

EL 117 - Critical Thinking for Essay Writing

3 Credit(s)

EL117 is a co-requisite for students in WR097. Students will develop and strengthen their critical reading, thinking, and writing skills. Together, EL117 and WR097 integrate these skills to prepare students for college-level writing.

Corequisite: WR 097

Learning Outcomes

Upon successful course completion, the student will:

1. Develop critical reading and thinking skills for academic success in writing within the context of a liberal education. Develop the ability to engage in and value a respectful and free exchange of ideas
2. Develop and apply a variety of reading strategies for college-level inquiry, learning, and thinking
3. Develop time management and goal setting strategies for successful college-level writing
4. Develop such critical thinking skills as synthesis and analysis as they pertain to writing
5. Develop information literacy skills required for college-level writing including locating, evaluating, and using source material (in print or online)

EL 121 - Effective Digital Learning

1-3 Credit(s)

This course introduces students to the major skills and knowledge needed to learn effectively in digital environments and from digital texts. Students will gain an understanding of time- and self-management strategies, critical digital literacy skills including active online reading and media comprehension strategies, and media analysis skills for use in fully online, partially online, and face-to-face classes where digital texts may be used.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Identify appropriate technology and methods to evaluate credibility of online information.
2. Locate and use appropriate online/digital media to expand personal and group knowledge, solve problems, and engage with online communities.
3. Choose effective technology for online/digital collaboration to create meaningful academic work.
4. Employ effective means of digital communication in academic contexts.
5. Apply online study techniques to learn from a variety of digital media.

6. Identify and develop skills necessary for successful participation in online learning, including time management, communication, and information sharing strategies.

Electronics

ET 121 - Shop Practices

2 Credit(s)

This first year course in electronics technology addresses the general lab skills and knowledge required to function safely and effectively in an electronics laboratory or shop environment. The student will be introduced to concepts in electronic circuit assembly, wire termination, and soldering. Included is an overview of electrical schematics and diagrams used in the design, assembly, and repair of electrical and electronic systems. The proper use of common lab equipment and hand tools will be covered. This is a hands-on course intended to give the student experience performing tasks that are best taught by practice. Throughout the course the underlying theme is on work site safety and the ability to follow directions.

Prerequisite: RD 087 and EL 115 OR prior college OR placement test.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Understand the principles of shop safety
2. Be skilled in basic soldering/de-soldering techniques
3. Have knowledge of electrical diagrams and schematics
4. Have knowledge of the techniques required for proper wire termination
5. Have a basic proficiency in the use of common electronics lab equipment and hand tools

ET 129 - Electrical Theory 1

4 Credit(s)

First course of a two-term sequence in electrical theory. This first term defines basic electrical units and laws of electrical theory as they apply to DC series, parallel, and combination circuits. AC waveforms and AC circuit components are introduced. Digital multimeters, oscilloscopes and function generators are used to measure electrical signals and troubleshoot basic circuits.

Prerequisite: RD 087 and EL 115 OR prior college AND MTH 060 or higher with a grade of C- or better, or placement test.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Read resistor color codes
2. Measure voltage, current, and resistance
3. Knowledge of DC series-parallel circuit characteristics
4. Understand basic AC circuits and use of the oscilloscope

ET 130 - Electrical Theory 2

1-4 Credit(s)

Second course of a two-term sequence in electrical theory. This course covers basic AC circuits and components, right triangle mathematics, RLC circuits, filters, and resonant circuits. In the lab students will build and troubleshoot basic AC circuits using the oscilloscope, function generator, and DMM.

Prerequisite: ET 129

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Effectively use mathematical skills to perform calculations common to the electrical trades
2. Identify different types of capacitors and inductors, read their values from different types of identification codes and know how to test them with various types of measuring equipment
3. Define the units of capacitance and inductance and explain how these devices charge and discharge in RC and RL circuits
4. Calculate the total value of capacitors that are connected in series and/or parallel
5. Identify high pass, low pass, band pass and notch filters
6. Describe Faraday's Law and Lenz's Law and explain their significance as they relate to voltage and work in practical applications
7. Identify dot polarities to determine the phase difference between the primary and secondary sides of a transformer
8. Recognize the basic types of common transformers and perform power, voltage and current calculations on both the primary and secondary sides of the transformer
9. Perform AC reactance calculations for capacitors and inductors
10. Demonstrate a working knowledge of trigonometry in the study of AC reactive

components and their phase angles

11. Analyze RC, RL and RLC circuits for individual currents, voltage and power drops and perform accurate impedance calculations for these circuits

12. Contrast the differences between parallel and series RLC circuits in AC applications

13. Based on component values, calculate a circuit's resonant frequency, half power points, Q and bandwidth

14. Explain the characteristics of a resonant circuit as it relates to power factors and the transfer of information

15. Demonstrate a working knowledge of the oscilloscope as a tool to analyze voltage, frequency and phase differences in complex AC circuits

Emergency Medical Services

EMS 101 - Introduction to Emergency Services

4 Credit(s)

Explores the role and responsibilities of a paramedic, to include, different kinds of emergency services systems, applicable Oregon law, relationship with governmental regulatory agencies, exposure risk to infectious disease and exposure to critical incident stress. This course is required for application into the second year of the AAS degree in Paramedicine.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Define the role and responsibilities of a paramedic
2. Describe the History and Structure of Emergency Medical Services
3. Discuss Medical and Legal Topics and How they relate to EMS
4. Discuss the Organization and Structure of Emergency Medical Services as they pertain to the Profession and Implementation on Emergencies
5. Define Stress Management as it relates to EMS
6. Discuss Blood-Born pathogens/communicable diseases, Hazardous Materials and describe safety precautions used in the EMS field
7. Examine personal and professional biases and prejudices in EMS, in order to develop a more accepting, tolerant and respectful approach to human diversity

EMS 102 - Crisis Intervention

3 Credit(s)

Designed to provide students pursuing a degree in Paramedicine with the knowledge to effectively manage psychological emergencies. Included in this course: physiology of stress and managing acute stress reactions, suicide, rape and sexual assault, child abuse, death and dying, drug and alcohol emergencies, burnout of the emergency worker and coping with job-related stress. This course is required for application into the second year of the AAS degree in Paramedicine.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Assess the student's own stress levels and coping skills associated with personal and job related factors.
2. Describe how intervention in crisis situations including mental illness, alcoholism, drug abuse, child abuse, suicide, and battering might affect the health care provider.
3. Compare and contrast the concepts of balance and resiliency and how they relate to self care, promoting healthy behaviors and responses germane to the burnout syndrome.
4. Discuss the impact of violence on community and the field of medicine.
5. Examine the concept of power and powerlessness of the health care provider and / or the patient or recipient(s) of EMS services.
6. Examine personal biases and prejudices in order to develop a more accepting, tolerant and respectful approach to human diversity.
7. Propose methods of interacting with persons related to a crisis incident and with victims of trauma, illness, or injury.
8. Discuss behavior and interactions for working with a dying patient and their families in a variety of cultural settings.

EMS 103 - Emergency Services Rescue

4 Credit(s)

Elementary procedures of rescue practices, systems, components, support, and control off rescue operations including ladder procedures and basic rescue tools. Introduction to techniques and tools of patient extraction, emphasizing application to traffic assistance. This course is required for application into the second year of the AAS degree in Paramedicine.

Prerequisite: EMS 111, EMS 112, and EMS 113 with grade of C- or better; P/NP not accepted

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Describe the role of the EMT at emergencies involving rescue operation

2. Describe the organizational structure and functions of Emergency Services

3. Describe the process of "size-up" as it related to decision making for proper tactics and strategies

4. Demonstrate the basic use of rescue techniques, including ropes, knots, ladders, SCBA, portable fire extinguishers, and other related items

5. Describe the role and techniques used of the EMT during extrication

6. Demonstrate on appropriate vehicles the techniques of gaining access to entrapped patients by use of all extraction equipment

7. Demonstrate the correct usage of patient immobilization and removal equipment

EMS 111 - Emergency Medical Technician

8 Credit(s)

This course is a state-approved course in Emergency Medical Technician. Successful completion of this course qualifies candidate to sit for state and national practical and written licensing exams administered locally. This course provides instruction in a variety of medical and trauma related emergencies. This is a demanding course designed for those who will respond to 911 emergencies in an ambulance or fire rescue and will function within an emergency medical services system. Supplies and equipment used is consistent with the tools of the trade. Fire departments and private ambulance services that respond to 911 emergencies carry very specific equipment and operate within very specific parameters. Students are taught how to apply their skills within this structure. This course is required for application into the second year of the AAS degree in Paramedicine.

Prerequisite: Must be enrolled in one of the following Majors: Paramedicine:

Emergency Medical Technician, CPC

Corequisite: EMS 112, EMS 113

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Demonstrate a proficient understanding of: the Emergency Medical System, medical emergencies, the human body
2. Outline proper interventions for specific medical emergencies
3. Function as a member of an EMS team
4. Demonstrate proficiency and understanding of the Department of Transportation objectives for EMT

EMS 112 - Emergency Medical Technician Lab

3 Credit(s)

This course is the Lab component of the Emergency Medical Technician licensing course.

Prerequisite: Must be enrolled in one of the following Majors: Paramedicine:

Emergency Medical Technician, CPC

Corequisite: EMS 111 and EMS 113

Learning Outcomes

Upon successful completion students will be able to:

1. Understand the various types of equipment and technologies used in EMS
2. Perform all skills within the EMT Scope of Practice
3. manage scenarios as both a team member and team leader

EMS 113 - Emergency Medical Technician Clinical

1 Credit(s)

This course is the Clinical Experience component of the Emergency Medical Technician licensing course.

Prerequisite: Must be enrolled in one of the following Majors: Paramedicine:

Emergency Medical Technician, CPC

Corequisite: EMS 111 and EMS 112

Learning Outcomes

Upon successful completion students will be able to:

1. Demonstrate understanding of the working environment of an EMT
2. Work cohesively with an EMS and/or hospital emergency department team
3. Perform skills within the scope of an EMT under the direction of a preceptor

EMS 201 - Pathophysiology

3 Credit(s)

This course is part of a multi-part program in paramedic education. This course covers the knowledge, skill and behaviors required of a paramedic in pathophysiology. Cognitive and psychomotor domains are measured for competency by a combination of written exams and skill demonstration. The

ffective domain is measured for competency using published professional standards. Program graduates are eligible to take the Program graduates are eligible to take the National Registry Paramedic Cognitive and Psychomotor Exams.

Prerequisite: Must be enrolled in one of the following Majors: Paramedicine

Learning Outcomes

Upon completion of this course, the successful student will be able to:

1. Understand the concept of pathophysiology
2. Apply principles of pathophysiology to the treatment of patients
3. Demonstrate understanding of the cellular environment and acid-base balancing

EMS 211 - Pharmacology 1

2 Credit(s)

This course is part 1 of a 2-part course within a multi-part program in paramedic education. This course covers the knowledge, skill and behaviors required of a paramedic in pharmacology. Cognitive and psychomotor domains are measured for competency by a combination of written exams and skill demonstration. The affective domain is measured for competency using published professional standards. Program graduates are eligible to take the Program graduates are eligible to take the National Registry Paramedic Cognitive and Psychomotor Exams.

Prerequisite: Must be enrolled in one of the following Majors: Paramedicine

Learning Outcomes

Upon completion of this course, the successful student will be able to:

1. Understand the concept of pharmacology
2. Apply principles of pharmacology to the treatment of patients
3. Demonstrate understanding of indications, contraindications, side and adverse effects, and desired outcomes of medications

EMS 212 - Pharmacology 2

2 Credit(s)

This course is part 2 of a 2-part course within a multi-part program in paramedic education. This course covers the knowledge, skill and behaviors required of a paramedic in pharmacology. Cognitive and psychomotor domains are measured for competency by a combination of written exams and skill demonstration. The affective domain is measured for competency using published professional standards. Program graduates are eligible to take the National Registry Paramedic Cognitive and Psychomotor Exams.

Prerequisite: EMS 211 with a grade of C- or better; P/NP not accepted. Must be enrolled in one of the following Majors: Paramedicine

Learning Outcomes

Upon completion of this course, the successful student will be able to:

1. Understand the concept of pharmacology
2. Apply principles of pharmacology to the treatment of patients
3. Demonstrate understanding of indications, contraindications, side and adverse effects, and desired outcomes of medications

EMS 221 - Trauma Emergencies 1

3 Credit(s)

This course is part 1 of a 2-part course within a multi-part program in paramedic education. This course covers the knowledge, skill and behaviors required of a paramedic in trauma emergencies. Cognitive and psychomotor domains are measured for competency by a combination of written exams and skill demonstration. The affective domain is measured for competency using published professional standards. Program graduates are eligible to take the National Registry Paramedic Cognitive and Psychomotor Exams.

Prerequisite: Must be enrolled in one of the following Majors: Paramedicine

Learning Outcomes

Upon completion of this course, the successful student will be able to:

1. Integrate the principles of kinematics to enhance the patient assessment and predict the likelihood of injuries based on the patient's mechanism of injury
2. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement the treatment plan for the patient with soft tissue trauma, burn injury, suspected head injury, suspected spinal cord injury, thoracic injury, abdominal injury, musculoskeletal injury, shock and/or hemorrhage
3. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement the treatment plan for the trauma patient
4. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement the treatment plan for the patient with an environmentally induced or exacerbated condition

EMS 222 - Trauma Emergencies 2

3 Credit(s)

This course is part 2 of a 2-part course within a multi-part program in paramedic education. This course covers the knowledge, skill and behaviors required of a paramedic in trauma emergencies. Cognitive and psychomotor domains are measured for competency by a combination of written exams and skill demonstration. The affective domain is measured for competency using published professional standards. Program graduates are eligible to take the National Registry Paramedic Cognitive and Psychomotor Exams.

Prerequisite: EMS 221 with grade of C- or better; P/NP not accepted. Must be enrolled in one of the following Majors: Paramedicine

Learning Outcomes

Upon completion of this course, the successful student will be able to:

1. Integrate the principles of kinematics to enhance the patient assessment and predict the likelihood of injuries based on the patient's mechanism of injury
 2. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement the treatment plan for the patient with soft tissue trauma, burn injury, suspected head injury, suspected spinal cord injury, thoracic injury, abdominal injury, musculoskeletal injury, shock and/or hemorrhage
 3. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement the treatment plan for the trauma patient
 4. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement the treatment plan for the patient with an environmentally induced or exacerbated condition
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EMS 231 - Medical Emergencies 1

3 Credit(s)

This course is part 1 of a 3-part course within a multi-part program in paramedic education. This course covers the knowledge, skill and behaviors required of a paramedic in medical emergencies. Cognitive and psychomotor domains are measured for competency by a combination of written exams and skill demonstration. The affective domain is measured for competency using published professional standards. Program graduates are eligible to take the National Registry Paramedic Cognitive and Psychomotor Exams.

Prerequisite: Must be enrolled in one of the following Majors: Paramedicine

Learning Outcomes

Upon completion of this course, the successful student will be able to:

1. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement the treatment plan for the patient with a medical problem involving the pulmonology, neurology, endocrinology, hematology, gastroenterology, urology
 2. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with an allergic or anaphylactic reaction or toxic exposure
 3. Utilize gynecological principles and assessment findings to formulate a field impression and implement the management plan for the patient experiencing a gynecological emergency
 4. Apply an understanding of the anatomy and physiology of the female reproductive system to the assessment and management of a patient experiencing normal or abnormal labor
 5. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for a neonatal patient
 6. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the pediatric patient
 7. Integrate the pathophysiological principles and the assessment findings to formulate and implement a treatment plan for the geriatric patient
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EMS 232 - Medical Emergencies 2

3 Credit(s)

This course is part 2 of a 3-part course within a multi-part program in paramedic education. This course covers the knowledge, skill and behaviors required of a paramedic in medical emergencies. Cognitive and psychomotor domains are measured for competency by a combination of written exams and skill demonstration. The affective domain is measured for competency using published professional standards. Program graduates are eligible to take the National Registry Paramedic Cognitive and Psychomotor Exams.

Prerequisite: EMS 231 with grade of C- or better; P/NP not accepted. Must be enrolled in one of the following Majors: Paramedicine

Learning Outcomes

Upon completion of this course, the successful student will be able to:

1. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement the treatment plan for the patient with a medical problem involving the pulmonology, neurology, endocrinology, hematology, gastroenterology, urology
 2. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with an allergic or anaphylactic reaction or toxic exposure
 3. Utilize gynecological principles and assessment findings to formulate a field impression and implement the management plan for the patient experiencing a gynecological emergency
 4. Apply an understanding of the anatomy and physiology of the female reproductive system to the assessment and management of a patient experiencing normal or abnormal labor
 5. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for a neonatal patient
 6. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the pediatric patient
 7. Integrate the pathophysiological principles and the assessment findings to formulate and implement a treatment plan for the geriatric patient
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EMS 233 - Medical Emergencies 3

2 Credit(s)

This course is part 3 of a 3-part course within a multi-part program in paramedic education. This course covers the knowledge, skill and behaviors required of a paramedic in medical emergencies. Cognitive and psychomotor domains are measured for competency by a combination of written exams and skill demonstration. The affective domain is measured for competency using published professional standards. Program graduates are eligible to take the National Registry Paramedic Cognitive and Psychomotor Exams

Prerequisite: EMS 232 with grade of C- or better; P/NP not accepted. Must be enrolled in one of the following Majors: Paramedicine

Learning Outcomes

Upon completion of this course, the successful student will be able to:

1. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement the treatment plan for the patient with a medical problem involving the pulmonology, neurology, endocrinology, hematology, gastroenterology, urology
 2. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with an allergic or anaphylactic reaction or toxic exposure
 3. Utilize gynecological principles and assessment findings to formulate a field impression and implement the management plan for the patient experiencing a gynecological emergency
 4. Apply an understanding of the anatomy and physiology of the female reproductive system to the assessment and management of a patient experiencing normal or abnormal labor
 5. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for a neonatal patient
 6. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the pediatric patient
 7. Integrate the pathophysiological principles and the assessment findings to formulate and implement a treatment plan for the geriatric patient
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EMS 241 - Electrocardiography 1

3 Credit(s)

This course is part 1 of a 2-part course within a multi-part program in paramedic education. This course covers the knowledge, skill and behaviors required of a paramedic in electrocardiography. Cognitive and psychomotor domains are measured for competency by a combination of written exams and skill demonstration. The affective domain is measured for competency using published professional standards. Program graduates are eligible to take the Oregon/National.

Prerequisite: Must be enrolled in one of the following Majors: Paramedicine

Learning Outcomes

Upon completion of this course, the successful student will be able to:

1. Understand the heart anatomy and physiology, conduction, and electrophysiology
2. Analyze, recognize, and determine electrocardiographic rhythms of the heart
3. Identify and form treatment plans based on electrocardiography

EMS 242 - Electrocardiography 2

3 Credit(s)

This course is part 2 of a 2-part course within a multi-part program in paramedic education. This course covers the knowledge, skill and behaviors required of a paramedic in electrocardiography. Cognitive and psychomotor domains are measured for competency by a combination of written exams and skill demonstration. The affective domain is measured for competency using published professional standards. Program graduates are eligible to take the Oregon/National.

Prerequisite: EMS 241 with grade of C- or better; P/NP not accepted. Must be enrolled in one of the following Majors: Paramedicine

Learning Outcomes

Upon completion of this course, the successful student will be able to:

1. Understand the heart anatomy and physiology, conduction, and electrophysiology
2. Analyze, recognize, and determine electrocardiographic rhythms of the heart
3. Identify and form treatment plans based on electrocardiography

EMS 251 - Paramedic Lab 1

1-3 Credit(s)

This course is part 1 of a 3-part lab series for Paramedicine.

Prerequisite: Must be enrolled in one of the following Majors: Paramedicine

Learning Outcomes

Upon completion of this course, the successful student will be able to:

1. Safely, and while performing all steps of each procedure, properly administer medications to patients
2. Accurately calculate drug dosages
3. Accurately calculate iv drip rates. safely, and while performing all steps of each procedure, successfully access the venous circulation on patients
4. Identify patient medication interactions, precautions
5. Interview with patients regarding symptoms
6. Evaluate patients for pertinent signs
7. Obtain and record vital signs
8. Identify adventitious lung sounds
9. Identify EKG rhythms
10. Apply the general concepts of pathophysiology in the assessment and management of emergency patients
11. Integrate pathophysiological principles of pharmacology and the assessment findings to formulate a field impression and implement a pharmacologic management plan
12. Use the appropriate techniques to obtain a medical history from a patient
13. Explain the pathophysiological significance of physical exam findings
14. Integrate the principles of history taking and techniques of physical exam to perform a patient assessment
15. Apply a process of clinical decision making to use the assessment findings to help form a field impression
16. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement the treatment plan for the patient with any traumatic or medical condition
17. Identify the current local and state standards that influence ambulance design, equipment requirements, and staffing of ambulances: National standards, State standards, ORS 820.300 thru 380 Ambulances and Traffic Laws, OAR 333-255-060 Ambulance Construction Criteria, OAR 333-255-0070, 71, 72 Ambulance Staffing, Local standards
18. Discuss the concept of "due regard for the safety of all others" while operating an emergency vehicle.
19. Understand all principles of operating an ambulance. Demonstrate understanding and application of leadership, communication, and documentation

EMS 252 - Paramedic Lab 2

1-3 Credit(s)

This course is part 2 of a 3-part lab series for Paramedicine.

Prerequisite: EMS 251 with grade of C- or better; P/NP not accepted. Must be enrolled in one of the following Majors: Paramedicine

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Safely, and while performing all steps of each procedure, properly administer medications to patients
2. Accurately calculate drug dosages

3. Accurately calculate iv drip rates. safely, and while performing all steps of each procedure, successfully access the venous circulation on patients
4. Identify patient medication interactions, precautions
5. Interview with patients regarding symptoms
6. Evaluate patients for pertinent signs
7. Obtain and record vital signs
8. Identify adventitious lung sounds
9. Identify EKG rhythms
10. Apply the general concepts of pathophysiology in the assessment and management of emergency patients
11. Integrate pathophysiological principles of pharmacology and the assessment findings to formulate a field impression and implement a pharmacologic management plan
12. Use the appropriate techniques to obtain a medical history from a patient
13. Explain the pathophysiological significance of physical exam findings
14. Integrate the principles of history taking and techniques of physical exam to perform a patient assessment
15. Apply a process of clinical decision making to use the assessment findings to help form a field impression
16. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement the treatment plan for the patient with any traumatic or medical condition
17. Identify the current local and state standards that influence ambulance design, equipment requirements, and staffing of ambulances: National standards, State standards, ORS 820.300 thru 380 Ambulances and Traffic Laws, OAR 333-255-060 Ambulance Construction Criteria, OAR 333-255-0070, 71, 72 Ambulance Staffing, Local standards
18. Discuss the concept of "due regard for the safety of all others" while operating an emergency vehicle
19. Understand all principles of operating an ambulance. Demonstrate understanding and application of leadership, communication, and documentation

EMS 253 - Paramedic Lab 3

1-3 Credit(s)

This course is part 3 of a 3-part lab series for Paramedicine.

Prerequisite: EMS 252 with grade of C- or better; P/NP not accepted. Must be enrolled in one of the following Majors: Paramedicine

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Safely, and while performing all steps of each procedure, properly administer medications to patients
2. Accurately calculate drug dosages
3. Accurately calculate iv drip rates. safely, and while performing all steps of each procedure, successfully access the venous circulation on patients
4. Identify patient medication interactions, precautions
5. Interview with patients regarding symptoms
6. Evaluate patients for pertinent signs
7. Obtain and record vital signs
8. Identify adventitious lung sounds
9. Identify EKG rhythms
10. Apply the general concepts of pathophysiology in the assessment and management of emergency patients
11. Integrate pathophysiological principles of pharmacology and the assessment findings to formulate a field impression and implement a pharmacologic management plan
12. Use the appropriate techniques to obtain a medical history from a patient
13. Explain the pathophysiological significance of physical exam findings
14. Integrate the principles of history taking and techniques of physical exam to perform a patient assessment
15. Apply a process of clinical decision making to use the assessment findings to help form a field impression
16. Integrate pathophysiological principles and assessment findings to formulate a field impression and implement the treatment plan for the patient with any traumatic or medical condition
17. Identify the current local and state standards that influence ambulance design, equipment requirements, and staffing of ambulances: National standards, State standards, ORS 820.300 thru 380 Ambulances and Traffic Laws, OAR 333-255-060 Ambulance Construction Criteria, OAR 333-255-0070, 71, 72 Ambulance Staffing, Local standards

18. Discuss the concept of "due regard for the safety of all others" while operating an emergency vehicle. 19. Understand all principles of operating an ambulance. Demonstrate understanding and application of leadership, communication, and documentation

EMS 261 - Paramedic Clinical 1

1 Credit(s)

This course is part 1 of a 3 part clinical experience that includes direct patient care necessary for completion of program objectives. This experience takes place within a hospital/clinical environment and under direct supervision. All skills are first taught in the classroom before being performed in the clinical setting. Criminal background check and drug testing required.

Prerequisite: Must be enrolled in one of the following Majors: Paramedicine

Learning Outcomes

Upon completion of this course, the successful student will be able to:

1. Safely, and while performing all steps of each procedure, properly administer medications to live adult patients
2. Accurately calculate drug dosages
3. Accurately calculate iv drip rates
4. Safely, and while performing all steps of each procedure, successfully access the venous circulation on live adult patients
5. Identify patient medication interactions, precautions
6. Interview with patients regarding symptoms
7. Evaluate patients for pertinent signs
8. Obtain and record vital signs
9. Identify adventitious lung sounds
10. Identify EKG rhythm

EMS 262 - Paramedic Clinical 2

3 Credit(s)

This course is part 2 of a 3 part clinical experience that includes direct patient care related outcomes necessary for completion of program objectives. This experience takes place within a hospital/clinical environment and under direct supervision. All skills are first taught in the classroom before being performed in the clinical setting. Criminal background check and drug testing required.

Prerequisite: EMS 261 with grade of C- or better; P/NP not accepted. Must be enrolled in one of the following Majors: Paramedicine

Learning Outcomes

Upon completion of this course, the successful student will be able to:

1. Safely, and while performing all steps of each procedure, properly administer medications to live adult patients
2. Accurately calculate drug dosages
3. Accurately calculate iv drip rates
4. safely, and while performing all steps of each procedure, successfully access the venous circulation on live adult patients
5. Identify patient medication interactions, precautions
6. Interview with patients regarding symptoms
7. Evaluate patients for pertinent signs
8. Obtain and record vital signs
9. Identify adventitious lung sounds
10. Identify EKG rhythm

EMS 263 - Paramedic Clinical 3

4 Credit(s)

This course is part 3 of a 3 part clinical experience that includes direct patient care related outcomes necessary for completion of program objectives. The use of multiple departments within the hospital enables the student to see a wide distribution of patient situations. This experience takes place within a hospital/clinical environment and under direct supervision. All skills are first taught in the classroom before being performed in the clinical setting. Criminal background check and drug testing required.

Prerequisite: EMS 262 with grade of C- or better; P/NP not accepted. Must be enrolled in one of the following Majors: Paramedicine

Learning Outcomes

Upon completion of this course, the successful student will be able to:

1. Safely, and while performing all steps of each procedure, properly administer medications to live adult patients
2. Accurately calculate drug dosages
3. Accurately calculate iv drip rates
4. Safely, and while performing all steps of each procedure, successfully access the venous circulation on live adult patients

5. Identify patient medication interactions, precautions
6. Interview with patients regarding symptoms
7. Evaluate patients for pertinent signs
8. Obtain and record vital signs
9. Identify adventitious lung sounds
10. Identify EKG rhythm

Energy Management

NRG 101 - Introduction to Energy Management

3 Credit(s)

This course defines the need for energy management as an integral part of society at all levels. The course presents the various employment opportunities available to energy management students through lectures, video and guest speakers.

Technical information includes basic energy accounting and analysis protocol.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Understand the history of and relationships among courses in the online Energy Management Program
2. Maneuver within the Moodle learning management system (LMS Moodle)
3. Communicate effectively using specific energy industry vocabulary
4. Apply mathematical skills and understanding of basic energy units of measure in a familiar energy use environment
5. Articulate interests in certain aspects of the various professional opportunities in the field

NRG 105 - Green Careers Exploration

3 Credit(s)

This course is an introduction to a wide range of technical careers related to sustainability, energy management, water resources and alternative transportation. Students will make connections between green career options and a more sustainable economy, environment and society. They will identify personal career goals and skill sets needed for green jobs.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Be able to define sustainable development and identify a few of its key concepts.
2. Identify and describe renewable and nonrenewable resources and a few of their implications.
3. Define green careers and describe their importance for sustainable development.
4. Can explain basic industry knowledge for multiple green careers and identify necessary skill sets needed for those careers.
5. Relate personal career goals to green career.

NRG 110 - Energy Efficiency Industry Software Applications

4 Credit(s)

Students will be exposed to several of the most commonly used software applications within the Energy Efficiency industry. This course covers basic features of each software application as well as how to use the software to solve common problems and/or basic tasks.

Learning Outcomes

Upon completion of this course, the successful student will be able to:

1. Understand the fundamentals of each software and identify major features.
2. Recognize & Identify current software and describe how each is utilized within the industry.
3. Demonstrate basic software application skills by completing a task.
4. Utilize several applications concurrently to solve a case study.
5. Identify software required for different scenarios or job tasks.

NRG 111 - Residential/Light Commercial Energy Analysis

3 Credit(s)

Topics include residential/light commercial heating systems; heat transfer through building envelope; degree days; sources of internal heat gains; heat loss calculations; indoor air pollution; codes and regulations. Spreadsheets will be used.

Prerequisite: PH 101 or department approval

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Articulate how energy is used in a residence or light commercial building
2. Use common commercial building energy units - kWh, kW, Therms, BTUs
3. Evaluate how energy is transferred in a residence

4. Define "R" Value and "U" Value, and how these help estimate the heat loss of a residence
5. Calculate building Air leakage and percentage of building ventilation
6. Conduct a Blower Door Test and analyze results of the test
7. Identify the different types of building insulation and associated R-Value
8. Evaluate residential Windows and doors and how these contribute to the building's heat loss and heat gain
9. Identify Common heating and cooling systems, and how these systems are rated in terms of efficiency
10. Calculate heating and cooling system COP, EER, AFUE
11. Read a Psychrometric Chart
12. Calculate the energy consumption of a Domestic Hot Water Heating unit
13. Work Safely in the built environment

NRG 112 - Commercial Energy Use Analysis

4 Credit(s)

Emphasis is on the analysis of energy use in commercial buildings. Topics include utility bill analysis, identifying energy consumption sources and related efficiency measures, use of micro-dataloggers, energy savings and investment calculations, audit report writing. Students complete a supervised field audit.

Prerequisite: NRG 111 and NRG 121 and MTH 095 or Math Placement or Department Approval.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Analyze historical utility data
2. Perform commercial energy audits
3. Program and install portable datalogging equipment
4. Organize field data and develop energy analysis procedure
5. Analyze datalogging/trend data to recognize potential issues
6. Calculate energy savings using weather based spreadsheet calculations
7. Create cost estimates based on RS Means
8. Assemble a draft energy analysis report
9. Provide professional presentations on commercial building energy use analysis

NRG 121 - Air Conditioning System Analysis

3 Credit(s)

Prerequisite: PH 101 or Department Approval. Students investigate the physical principles of HVAC systems. Topics include related HVAC system equations, refrigeration, psychrometrics, central forced air furnaces, ground couple heat pumps, SEERs, EERs, AFUEs, fuels, and unitary single zone and multi-zone secondary systems.

Prerequisite: PH 101 or department approval.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Describe the fundamental operating principles and components of the various HVAC equipment and systems used in commercial buildings
2. Use data and trend logging to express the value of thermodynamics, heat transfer, and fluid flow in an operating HVAC system
3. Perform basic heating and cooling load calculations
4. Use psychrometrics to investigate air/water properties and conditions
5. Analyze efficiencies of HVAC equipment and systems and estimate annual energy use of buildings

NRG 122 - Commercial Air Conditioning System Analysis

3 Credit(s)

Students learn to identify commercial HVAC system types and the energy impact of each type. Calculations will be used to determine HVAC system efficiency. Students will investigate HVAC delivery systems including fans pumps dampers, control valves, and ducting. The course includes field work.

Prerequisite: NRG 121 or department approval.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Identify commercial HVAC system types
2. Determine the general energy impact of each HVAC system type
3. Analyze the effectiveness of various HVAC delivery systems (air distribution and hydronic)
4. Evaluate the effectiveness of motors, fans, and pumps to optimize energy use

NRG 123 - Energy Control Strategies

4 Credit(s)

Topics include building system control theory and devices, including electric, pneumatic, and digital controls. An emphasis is placed on identifying and understanding control strategies to estimate energy savings. Hands on labs

reinforce device identification. Students complete an energy efficiency controls calculation project.

Prerequisite: NRG 122 and NRG 124 or department approval.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Evaluate building performance and effectiveness of a building control system with a focus on controllers, sensors, and devices, including electric, pneumatic, and digital controls
2. Identify control systems and strategies to implement energy savings as they apply to HVAC equipment and the commercial building
3. Apply energy control principles to an actual job site

NRG 124 - Energy Efficiency Methods

4 Credit(s)

Students learn analysis of energy systems with a focus on efficiencies of energy conversion devices. Students will gain proficiency in some common units and formulas required to work with energy and power and analyze the energy or cost savings associated with efficiency strategies.

Prerequisite: PH 102 or instructor consent

Learning Outcomes

A systems approach is used to analyze the input, output, and efficiency of commonplace energy conversion devices. Included are motors, fans, pumps, domestic water heaters, furnaces, boilers, refrigeration devices, and heat pumps. In so doing, students will:

1. Become fluent in the use of the many different units used to denote and measure energy & power
2. Learn what quantities need to be measured to determine energy & power in different systems
3. Determine the energy and cost savings associated with different energy efficiency improvement strategies

NRG 131 - Lighting Fundamentals

3 Credit(s)

Topics include assessment of quantity and quality of light, light sources, luminaries, lighting controls, manufacturer lamp and ballast specifications, lighting power density, lighting-HVAC interactions, retrofit opportunities, cost savings analysis, and lighting codes/regulations. Requires a directly supervised lighting audit project.

Prerequisite: PH 101 and PH 102 or department approval

Learning Outcomes

Students who successfully complete this course will be able to:

1. Identify light sources
2. Understand lighting terminology
3. Recognize features and components of luminaries
4. Comprehend the basics methods for quality lighting design
5. Assess strategies for achieving energy efficiency while maintaining appropriate light levels
6. Understand basic lighting control strategies
7. Calculate energy and cost savings associated with lighting projects
8. Develop an awareness for lighting applications, approaches and strategies

NRG 142 - Energy Accounting

3 Credit(s)

Course will include review of energy units, data gathering for energy accounting utility rates and schedules, energy data organization, adjusted baselines, cost avoidance, load factor, data analysis, data presentation, use EPA's Portfolio Manager software.

Prerequisite: BT 123

Learning Outcomes

Upon successful completion of this course, students will be able to

1. Analyze utility consumption through defining trends, adjusted baselines, weather normalization, load factors, load shapes, and baseloads
2. Develop cost-effective solutions to high energy consumption through operation and maintenance improvements, energy saving capital improvement measures, measurement and verification of the operating conditions of energy-using equipment, and monitoring systems
3. Identify methods of implementing energy conservation measure projects and explore different utility incentives
4. Use simple payback and life cycle cost analysis to differentiate and select energy efficiency measures

NRG 181 - Direct Digital Controls 1

4 Credit(s)

Hands-on training using control system management software. Configuring alarms and user access, trend control points, generating reports, adjusting control loops, experiencing a functioning building control system. Dashboard and metering systems, with an emphasis on future smart grid functionality.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Gain functional knowledge of a sampling of Building Automation Systems (BAS) for HVAC equipment
 2. Use appropriate vocabulary specific to BAS or DDC systems
 3. Learn cable specifications and implement proper wiring procedures and terminations
 4. Design and build different control loops incorporating various input and output devices
 5. Be able to document and specify selected DDC devices and controllers as part of a system retrofit
 6. Develop control system logic programs
 7. Simulate automatic control of a constant volume packaged air handling unit
 8. Produce a BAS points-to-points checklist
-

NRG 182 - Commercial HVAC Controls

4 Credit(s)

Controls perspective on commercial HVAC systems, ranging from older pneumatically controlled systems to newer digitally controlled systems. Comparing the benefits of different mechanical room systems and control systems. Retrofit opportunities and other energy conservation measures.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Gain functional knowledge of a variety of commercial HVAC control systems
 2. Build expertise in identifying and describing existing mechanical room control systems
 3. Develop a control system sequence of operation
 4. Be able to interpret energy code compliance for HVAC control system
 5. Be able to document and specify selected DDC devices and controllers as part of a system retrofit
 6. Develop preliminary schematic design for a Building Automation System (BAS) upgrade
 7. Produce a BAS points list
 8. Develop a BAS upgrade cost estimate
 9. Be able to identify control system retrofit opportunities and other energy conservation measures
-

NRG 183 - Controls Retuning and Troubleshooting

4 Credit(s)

Diagnostics and troubleshooting building control systems. Use occupant comfort complaints or other alerts, determine causes, use trend logging and visual inspection of equipment, and determine problem solutions; set point changes, modify control loops, return control loops or schedule maintenance.

Prerequisite: NRG 181

Learning Outcomes

Students who successfully complete this course will be able to:

1. Review selected HVAC systems at Lane Community College's Downtown and Main campuses
2. Develop a troubleshooting process for multiple types of HVAC equipment
3. Create equipment monitoring plans that supplement troubleshooting process
4. Investigate and evaluate Building Automation System (BAS) control system sequences of operation
5. Create, evaluate, and annotate trend logs that document actual equipment operation
6. Compare design sequences of operation with actual BAS operation
7. Review and document BAS microblock-based program logic
8. Review and optimize equipment operating schedules and setpoints
9. Evaluate operational efficiency of HVAC air handling equipment and terminal units
10. Evaluate operational efficiency of selected HVAC plant equipment (boilers, chillers, pumps)
11. Maneuver through typical supervisory BAS software
12. Make technical-based re-tuning recommendations for improving BAS control

system operation

13. Quantify energy savings using industry-accepted simplified calculations
-

NRG 184 - Direct Digital Controls 2

4 Credit(s)

Hands-on training modules and electronics used to implement building automation; control loop logic, schematics, and sequences of operation with applications for desired system behaviors. Controls design process, implementation, and commissioning using industry software and equipment.

Prerequisite: NRG 181

Learning Outcomes

Students who successfully complete this course will be able to:

1. Be able to discuss a sampling of Building Automation Systems (BAS) for HVAC equipment
 2. Use appropriate technical vocabulary specific to BAS or Direct Digital Control (DDC) systems
 3. Troubleshoot and identify hardware and software issues using point-to-point analysis
 4. Set up trends and alarms to be used for system monitoring
 5. Design control system logic programs using object-oriented programming software to control the system
 6. Create and program simple fault detection and diagnostics (FDD) algorithms
 7. Use lab kit equipment to build complete control circuits that simulate sub-sequences of operation
 8. Build a cumulative operable BAS workstation containing equipment that can control an HVAC system
 9. Be able to discuss BACnet protocol, system integration capabilities, and network options
-

NRG 185 - Lighting Controls

4 Credit(s)

Students will gain functional knowledge of a variety of commercial building lighting control systems ranging from simple manual on/off switching to complex automatically-controlled systems to newer digitally controlled systems. Students will identify and describe lighting systems/types/technology, including control systems with emphasis on comparing the benefits of one system versus another. Students will modify control system parameters based on original design or new control sequences.

Learning Outcomes

Upon successful completion of this course, the student will:

1. Define and use appropriate vocabulary specific to commercial lighting control systems.
2. Select appropriate systems for various control applications.
3. Modify control sequences of operation.
4. Identify and solve control system issues.
5. Specify lighting control system components.
6. Use critical thinking skills to identify and evaluate energy saving opportunities.
7. Calculate energy consumption savings.

Engineering**ENGR 101 - Engineering Orientation**

3 Credit(s)

An introduction to engineering, its evolution, methods, and ethics. An overview of various engineering disciplines and curriculum requirements, an introduction to a variety of modeling and analysis methods, written and oral communication activities, discussion of professional ethics and social implications of engineering work. The course includes visits by guest speakers, possible field trips, introductory activities on measurement methods, data collection, use of electronic spreadsheets and the Internet, possible group projects and/or oral and written reports.

Prerequisite: MTH 095 completed with a grade of "C-" or better within the past two years or placement by the College's Math Placement process.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Demonstrate an appreciation and basic understanding of the history of engineering
2. Demonstrate an understanding of how the innovations created by engineers of the past have affected today's society and the environment
3. Demonstrate an understanding of the various engineering fields, the required academic training, career options and flexibility, salaries

4. Demonstrate an appreciation of challenges facing humans in the future and the role that engineers will play in addressing these challenges
5. Demonstrate an understanding of the required elements of being a successful engineering student and exposure to these required elements. These include attitude, study habits, effective use of time, problem-solving methods, visualization, effective use of computers and handheld calculators, estimation and prediction methods, oral and written communication skills (including effective listening), ethics, honesty and legal issues
6. Demonstrate exposure to fundamentals of engineering including units of measure and unit conversion, mathematics skills, statics, dynamics, thermodynamics, electricity, and economics

ENGR 102 - Engineering Orientation 2

4 Credit(s)

This course is an introduction to the use of computing language in engineering. Focuses on problem solving skills, algorithm design, debugging, and writing programs using universal design principles.

Prerequisite/Corequisite: MTH 112 or higher completed with a grade of C- or better within the past two years

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Use critical thinking skills to structure and solve problems drawn from technical areas
2. Use selected features of computer software (currently MATLAB and Excel) as tools in problem settings
3. Independently learn new features of technically oriented computer software (currently MATLAB).
4. Participate productively in technical group work

ENGR 115 - Engineering Graphics

3 Credit(s)

An introduction to graphic communication, including visualization, multiview and isometric projections, sections, auxiliary views, and ASME dimensioning and tolerancing standards. Graphic concepts are applied using freehand sketching and Solidworks.

Prerequisite: ENGR 101

Prerequisite/Corequisite: MTH 112 or equivalent course completed with a grade of C- or better within the past two years or placement test

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Understand fundamental standards and conventions applied to mechanical drawings
2. Use sketches to communicate and record design intent
3. Use Solidworks to create 3-D solid models and to generate and plot 2-D drawings
4. Understand fundamental principles of orthographic and isometric projection
5. Understand fundamental principles of auxiliary and section views

ENGR 211 - Statics

4 Credit(s)

Principles of statics of particles and rigid bodies are studied with a vectorial approach. Particular attention will be given to the composition, resolution and equilibrium of coplanar and non-coplanar force systems; two dimensional trusses and frames; centroids and moments of inertia of plane areas; coulombic friction; and the distribution of shear and bending moments in simple beams.

Prerequisite: MTH 252 and PH 211 completed with a grade of C- or better within the past eight terms

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply vector algebra to compute the resultants of coplanar force systems
2. Draw correct Free Body Diagrams and write the corresponding equations of equilibrium
3. Solve equilibrium equations for unknown force components
4. Determine forces acting in simple trusses, frames, and machines
5. Locate centroids of areas
6. Construct axial force, shear, and bending moment diagrams for statically determinate beams under various loading conditions
7. Solve problems involving coulomb friction

ENGR 212 - Dynamics

4 Credit(s)

This is a fundamental dynamics course about analysis of motions of particles and rigid bodies encountered in engineering. Topics include kinematics and kinetics of particles and kinematics of rigid bodies; Newton's second law of motion; rectilinear and curvilinear motion; linear and angular momentum; principles of work and energy; impulse and momentum and D'Alembert's Principle.

Prerequisite: ENGR 211 and MTH 254, all completed with a grade of C- or better within the past two years

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Demonstrate appropriate application of the equations of kinematics to situations involving motion of a particle in space
2. Demonstrate appropriate application of Newton's Second Law and the equations of kinetics to situations involving motion of a particle in space
3. Demonstrate appropriate application of the equations of kinematics to situations involving motion of a rigid body in space
4. Solve dynamics problems visually using vector geometry
5. Solve dynamics problems using algebraic vector analysis and calculus in each of the following types of coordinate systems: path (nt), rectangular (2D & 3D), polar, cylindrical, spherical, translating (2D) and rotating (2D)

ENGR 213 - Strength of Materials

4 Credit(s)

Course presents theory of stress and strain, shear, bending, combined stresses, and temperature-induced stresses in axially loaded members, circular shafts, beams and in statically indeterminate systems. Additional topics include thin-walled pressure vessels, torsional and flexural loading, failure theory and column buckling.

Prerequisite: ENGR 211 and MTH 252, both completed with a minimum grade of "C-" or better within the past two years

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Solve problems involving single loading principles
2. Evaluate basic combined loading effects
3. Demonstrate application of basic indeterminate analysis techniques
4. Demonstrate understanding of basic elastic / plastic analysis
5. Calculate simple beam deflections
6. Use buckling theory applied to simple columns subjected to various end conditions

ENGR 221 - Electrical Fundamentals 1

4 Credit(s)

Linear circuits will be analyzed via Kirchoff's Laws using idealized circuit elements. Steady state and sinusoidal responses of passive and active circuits will be addressed. The course emphasizes a combination of conceptual understanding, mathematical analysis, lab experiments and computer simulations. This course is designed for engineering majors.

Prerequisite: PH 213 completed with a grade of "C-" or better within the past two years

Learning Outcomes

Upon completion the student will:

1. Understand and apply the current-voltage relationships (Ohm's Law) of resistors.
2. Understand, model and analyze the current-voltage relationships for nonlinear circuit elements such as diodes
3. Understand and analyze independent and dependent current and voltage sources in dc circuits
4. Understand and apply the concept of power to various circuit elements
5. Understand and apply Kirchoff's laws
6. Understand and apply series and parallel resistor connections to simplify circuits and identify when circuits cannot be simplified
7. Understand and apply the concepts of voltage and current division
8. Understand and apply Wye-Delta transformations to simplify circuits
9. Understand and apply mesh analysis and nodal analysis for resistive circuits
10. Understand and apply Superposition principle to simplify circuits
11. Understand and apply Thevenin's and Norton's theorems to simplify circuits
12. Understand and apply load line analysis to solve linear and nonlinear circuits
13. Analyze non-ideal op-amp circuits

14. Understand and analyze circuits involving op-amps including inverting and non-inverting amplifiers, summation circuits and more
15. Understand and apply the current-voltage relationships of capacitors
16. Understand and apply the current-voltage relationships of inductors
17. Analyze first and second-order circuits, which contain resistors, capacitors, or inductors. Skills (Problem solving, Design, Experiment and other ABET related skills)
18. Apply scientific and engineering principles to solve problems: Apply linear algebra to solve problems involving linear circuit elements; Apply differential equations to solve problems involving resistors, capacitors and inductors; Design and analyze circuits to solve practical problems and interface with other systems; Identify assumptions in solutions
19. Design and conduct experiments: Use available equipment to design experiment; Develop measurement model for experiment; Analyze and interpret data
20. Design system, component or process to meet desired needs: Identify problem, Collect info and data, Experimental design, Solution development, Implement solution, Document solution, Provide feedback and improvement
21. Function on teams: Ideally multidisciplinary (although limited by course constraints)
22. Understand and demonstrate ethical behavior
23. Understand impact of engineering solutions in global and societal contexts
24. Engage in life-long learning
25. Gain experience in building and troubleshooting circuits using standard testing equipment
26. Use modern engineering tools: Learn the basics of PSPICE, a software tool for analyzing circuits including linear and nonlinear elements and time independent and time dependent behavior; Use software packages such as Excel and Matlab to analyze data and solve problems
27. Consider multiple methods of analysis to arrive at a solution
28. Evaluate special and extreme cases
29. Use solutions to make predictions
30. Check solutions based on graphs, units, physical constraints, conservation laws, limiting behavior and reasonable fit to the question
31. Use multiple representations to determine solution

English

ENG 100 - Children's Literature

4 Credit(s)

Children's Literature is a wide-ranging introductory course which includes the history of literature for children and a continuing discussion of the ways our culture and history have defined and created what children may or may not be and what they may or may not read, enjoy, or understand. Students will develop criteria for the selection and evaluation of literature for children at different developmental stages. Students will explore current debates in and around children's literature, scholarship, classroom use, and publishing. This course features multicultural materials and touches on a variety of media, including film, cartoons, television, and print. Though many students who take the course are, or will be, working with children, the course addresses children's literature from a literary perspective, discussing texts from theoretical as well as a pedagogical framework. A major aim of the class is to introduce students to recent and emerging authors in order to broaden familiarity with current material available to young people.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Gain familiarity with a variety of texts for young readers across genres and historical periods.
2. Learn to identify various genres and sub-genres within Children's Literature and gain familiarity with some of the criteria used by teachers, publishers, and librarians for evaluating Children's Literature.
3. Critically consider a variety of texts such as cartoons, TV shows, movies, and advertisements aimed at children as part of the larger scope of the study of Children's Literature.
4. Critically consider how social, political, cultural, economic, geographic, and historical factors affect the lived experiences of children, as well as the norms and expectations of childhood in various places and times .
5. Identify how social, political, cultural, economic, and historical factors influence the creation, publication, and interpretation of literature for young children.
6. Critically read and engage with texts written for children, paying careful attention to issues related to diversity (or lack thereof) within these texts.

7. Identify some of the major motifs and archetypes in Children's Literature.
8. Craft and present coherent arguments about both the Children's Literature texts and the theory covered in this course in written assignments, in-class discussions, and oral presentations.
9. Examine the role children's literature plays in the literacy process.

ENG 104 - Introduction to Literature: Fiction

4 Credit(s)

This course will present to the student a wide range of fiction from various time periods and cultures. Students will learn basic literary terminology, analyze and interpret texts, and discuss concepts that enhance appreciation of fiction. The course may include the short story and the novel or novella.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Read and interpret works of fiction at both a literal and figurative level
2. Identify and define significant literary devices (such as plot, character, setting, theme and point of view) for the purpose of meaningful interpretation
3. Interpret works of fiction within their contexts (e.g., literary/historical periods and influences, cultural and biographical background of authors or publication, authorial intentions and critical reception)
4. Demonstrate familiarity with social and political perspectives on fiction, such as those that consider race, gender, ethnicity, nationality and sexual orientation
5. Use effective oral and written communication to develop literary interpretations independently and/or collaboratively

ENG 105 - Introduction to Literature: Drama

4 Credit(s)

This course will introduce students to a wide variety of world plays which may include classical Greek drama, Shakespeare, Noh theater, and modern works. Students will learn basic dramatic terminology, analyze and interpret texts, and discuss concepts that enhance appreciation of drama. The course may include informal performance or other creative approaches to drama.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Read and interpret works of fiction at both a literal and figurative level
2. Identify and define significant literary devices (such as plot, character, setting, theme and point of view) for the purpose of meaningful interpretation
3. Interpret works of fiction within their contexts (e.g., literary/historical periods and influences, cultural and biographical background of authors or publication, authorial intentions and critical reception)
4. Demonstrate familiarity with social and political perspectives on fiction, such as those that consider race, gender, ethnicity, nationality and sexual orientation
5. Use effective oral and written communication to develop literary interpretations independently and/or collaboratively

ENG 106 - Introduction to Literature: Poetry

4 Credit(s)

In this course, students will experience a wide range of poetry from various time periods and cultures. Students will learn basic poetic terminology, analyze and interpret texts, and discuss concepts that enhance appreciation of poetry. Students may also engage in creative assignments.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Read and interpret a variety of poems at both a literal and figurative level
2. Identify and define significant poetic devices (such as imagery, symbol, metaphor, rhythm, rhyme, and meter) for the purpose of meaningful interpretation
3. Interpret poems within their contexts (e.g., literary/historical periods and influences, cultural and biographical background of poets or publication, poets' intentions and critical reception)
4. Demonstrate familiarity with social and political perspectives on poetry, such as those that consider race, gender, ethnicity, nationality and sexual orientation
5. Use effective oral and written communication to develop literary interpretations independently and/or collaboratively

ENG 107 - Survey of World Literature

4 Credit(s)

Part of a two-term offering to acquaint students with representative works of important world writers, literary forms, and significant currents of thought. The class is intended primarily for students who aspire to a broad education and who want to expand their reading experience and interpretive skills. The material covers the ancient and medieval eras.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Demonstrate an understanding of selected major literary themes and important developments and transformations within and across cultures
2. Demonstrate an awareness of the functioning of the formal elements of literature, character, plot setting, imagery, symbol, point-of-view, and tone
3. Demonstrate an understanding of important historical and cultural contexts that affect literature
4. Demonstrate capability to examine multiple points of view relating to gender and culture, and to embrace contrasting truths

ENG 109 - Survey of World Literature

4 Credit(s)

Survey of World Literature is a two-term sequence to acquaint students with representative works of important world writers, literary forms, and significant currents of thought. The class is intended primarily for students who aspire to a broad education and who want to expand their reading experience and interpretive skills. The material covers the nineteenth century until the present day.

Prerequisite: None; recommended to have college-level reading and writing skills (a passing grade in WR 115 or placement into WR 121)

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Demonstrate an understanding of selected major literary themes and important developments and transformations within and across cultures
2. Demonstrate an awareness of the functioning of the formal elements of literature -- character, plot setting, imagery, symbol, point-of-view, and tone
3. Demonstrate an understanding of important historical and cultural contexts that affect literature
4. Demonstrate capability to examine multiple points of view relating to gender and culture, and to embrace contrasting truths"

ENG 151 - Black American Literature

4 Credit(s)

This course will offer students an intense examination of and engagement with Black American authors. Students will analyze and respond to a wide variety of issues, critical questions, and perspectives regarding how to interpret and define the journey of African Americans and where this path might eventually lead. Students will read, critically engage, and respond to texts in a variety of literary genres as well as critical and theoretical texts.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Gain familiarity with a variety of texts composed by Black American writers across genres and historical periods
2. Critically read/engage with texts written by Black Americans
3. Engage with a variety of literary and cultural theory and apply various theoretical frameworks to the primary texts in the course
4. Identify some of the major themes/ideas/issues/characters that recur in Black American literature
5. Identify how social, political, cultural, economic, and historical factors influence both the creation and interpretation of literature by Black Americans
6. Form and present coherent ideas and arguments about Black American Literature in both written and oral responses
7. Examine the role/influence of Black American literary texts in the broader framework of American literature

ENG 194 - Literature of Comedy

4 Credit(s)

"Is comedy really tragedy plus time?" This course traces the historical and cultural development of canonical and popular works of comedy. We will develop a working definition of comedy for our times by exploring classic and contemporary theories of humor, laughter, and comedy in its social contexts. Texts range from ancient theories to contemporary social media contexts. Genres may include plays, essays, poems, fiction, film, social and streaming media, and comic arts. Themes include the changing role of comedy in societies, the role of gender, race, sexuality, class and audience in shaping what's funny, and the conventions, mechanics and effects of jokes, tropes, and types.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Analyze the genre of comedy in literary texts within its literary, historical and social contexts
2. Assess and apply diverse approaches and criteria for understanding and

analyzing comedy

3. Describe key elements of comic forms and understand the functioning of comedy's formal elements in texts
4. Examine cultural values reflected in comic writing and visual forms
5. Use textual evidence to support interpretive claims about comedy
6. Contribute to collaborative learning through formal and informal writing and discussion forums and/or creative projects

ENG 201 - Shakespeare

4 Credit(s)

One scholar suggests that Shakespeare's works "remain the outward limit of human achievement"; they fascinate us because we "cannot catch up to them." Nevertheless, we will have fun running after them. This survey explores the works of Shakespeare, covering 3-5 plays and at least one sonnet each term. Instructors might divide the plays by theme, genre, or chronology. ENG 201 may include *Romeo and Juliet*.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Read and interpret works of Shakespeare at both a literal and figurative level
2. Use critical and interpretive frameworks to investigate contextual meanings of Shakespeare's plays
3. Identify and discuss themes, issues, and language conventions in a variety of plays
4. Examine cultural values reflected in the works of Shakespeare as written and produced
5. Use textual evidence to support interpretive claims about Shakespeare's works
6. Contribute to collaborative learning through formal and informal writing and discussion forums and/or creative projects

ENG 203 - Shakespeare

4 Credit(s)

One scholar suggests that Shakespeare's works "remain the outward limit of human achievement"; they fascinate us because we "cannot catch up to them." Nevertheless, we will have fun running after them. This survey explores the works of Shakespeare, covering 3-5 plays and at least one sonnet each term. Instructors might divide the plays by theme, genre, or chronology. ENG 203 may include *Hamlet* and/or *King Lear*.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Read and interpret works of Shakespeare at both a literal and figurative level
2. Use critical and interpretive frameworks to investigate contextual meanings of literature
3. Identify and discuss themes, issues, and language conventions in a variety of plays
4. Examine cultural values reflected in the works of Shakespeare as written and produced
5. Use textual evidence to support interpretive claims about Shakespeare's works
6. Contribute to collaborative learning through formal and informal writing and discussion forums and/or creative projects

ENG 204 - Survey of British Literature

4 Credit(s)

Survey of British Literature is a two-term sequence to acquaint students with representative works of important British writers, literary forms, and significant currents of thought. The material for the first term was written prior to approximately 1785 BCE. Each course may introduce students to different methodological perspectives/lenses through which to read and interpret literary texts, and may include developing an understanding of the social, political and cultural contexts in which texts are produced and interpreted. Primary emphasis is on reading and engaging with the literary materials.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Read and comprehend a variety of genres from diverse British literary traditions created prior to approximately 1785 BCE
2. Use close reading and interpretive frameworks to examine relationships between texts and their social, historical, cultural and literary contexts
3. Think critically about British literary and other texts, examining diverse issues from aesthetics to canon formation
4. Demonstrate awareness of the power and nuance of language: distinguish between denotative and connotative meanings in texts
5. Contribute to collaborative learning through formal and informal writing and

discussion forums and/or creative projects. Use textual evidence to support interpretive claims about works for British Literature

ENG 205 - Survey of British Literature

4 Credit(s)

Survey of British Literature is a two-term sequence to acquaint students with representative works of important British writers, literary forms, and significant currents of thought. The material for the second term was written after approximately 1785 BCE. Each course may introduce students to different methodological perspectives/lenses through which to read and interpret literary texts, and may include developing an understanding of the social, political and cultural contexts in which texts are produced and interpreted. Primary emphasis is on reading and engaging with the literary materials.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Read and comprehend a variety of genres from diverse British literary traditions created after approximately 1785 BCE
2. Use close reading and interpretive frameworks to examine relationships between texts and their social, historical, cultural and literary contexts
3. Think critically about British literary and other texts, examining diverse issues from aesthetics to canon formation
4. Demonstrate awareness of the power and nuance of language: distinguish between denotative and connotative meanings in texts
5. Contribute to collaborative learning through formal and informal writing and discussion forums and/or creative projects. Use textual evidence to support interpretive claims about works for British Literature

ENG 215 - Latino/a Literature

4 Credit(s)

This is an introductory course to Latinx literature that will examine some of the major issues that have influenced its development beginning with the contact between European and pre-Columbian cultures. Students will also read some of the major voices in Latin American literature in order to examine how their work anticipates many of the issues facing contemporary Latinx writers in the United States.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Analyze a variety of literature in terms of theme, symbolism and cultural contexts
2. Understanding Latinx literature within a global literary and political context
3. Distinguish between connotation and denotation and demonstrate how connotative language shapes major parts of the selected novels and poetry
4. Demonstrate ability to use interpretive frameworks to investigate contextual meanings of literature

ENG 217 - Reading, Writing and Digital Culture

4 Credit(s)

This course combines research into the impact of 21st century technologies and new media on the study of literature and culture with the use of digital humanities methods to analyze texts and create new knowledge and new theoretical and ethical considerations and other developments in the field.

Prerequisite: Recommended: College-level reading and writing skills (a passing grade in WR 115 or placement into WR 121)

Learning Outcomes

Upon successful completion of this course, the student will:

1. Read, analyze, and synthesize electronic literary and cultural texts, artifacts and new media using appropriate research tools and techniques; convert primary sources to electronic formats with relevant metadata.
2. Use various digital humanities strategies to interpret literary and/or other culturally significant texts.
3. Collaborate with peers through new technologies.
4. Understand and analyze the major debates in digital humanities, including ethical considerations and considerations of race, gender, sexual orientation and difference and explain how these issues are relevant for undergraduates in a community college setting.
5. Collaboratively produce new digital humanities projects (e.g., a new digital archive or a system of tagging for an extant text or archive, a crowdsourced document, a geotagged open-source document, etc.).

ENG 222 - Literature and Gender

4 Credit(s)

This course will examine representations and/or investigations of gender in literature. While some literature chosen for the course may thematically focus readers on the gender roles assigned to people at different points in time in relation to a given culture, other literature may examine the concept of gender itself. Students may consider relevant concepts from feminist theory and gender studies such as the difference between gender identity, gender expression, sex, and sexuality, as well as gender construction, performativity, and intersectionality.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Read, comprehend, and respond to a diverse range of texts about gender and/or gender roles
2. Use close reading and interpretive frameworks to examine relationships between texts and their social, historical, cultural and literary contexts
3. Explore how literature reflects and shapes perceptions of the concepts of gender, gender roles, gender identity and gender expression as they intersect with race, class, sexual orientation and nationality
4. Demonstrate awareness of the power and nuance of language and (when relevant) image: distinguish between denotative and connotative meanings in texts
5. Use detailed textual evidence to support interpretive claims about texts
6. Contribute to collaborative learning through formal and informal writing, discussions, and/or creative projects

ENG 232 - Native American Literature, Myth and Folklore

4 Credit(s)

This course provides an introduction to the oral traditional and formal written literature of Native American cultures through a wide variety of texts from different countries, tribes, regions, and individuals. Students will examine the world view expressed in the literature, the major thematic currents of oral and written Native American literature, the characteristics of Native American forms and traditions, and the characteristics it shares.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Recognize their experience, strength and hope more completely by placing it alongside the experiences, strengths, and hopes expressed by Native American literary artists.
2. Identify major themes developed in Native American literature.
3. Identify elements of world view common to Native American people and expressed in their literatures.
4. Recognize these elements and themes as they function in a wide variety of Native American texts, especially oral ones.
5. Identify the distinctive literary characteristics of Native American oral literary traditions.
6. Identify the distinctive literary characteristics of Native American writers and also the major characteristics they share with African American, Chicana/o, Asian American and Euro-American writers.
7. Recognize these characteristics operating in pieces of oral and written Native American literature.
8. Distinguish between connotation and denotation and demonstrate how connotative language helps shape major aspects of the literary tradition.
9. Demonstrate ability to use interpretive frameworks to investigate contextual meanings of literature.

ENG 240 - Nature Literature

4 Credit(s)

Metá-kuye-ásin. All our relations. In this course we read essays and poems by writers who find home in the wilderness, desert, mountains, farms, prairies—and family in the plants and animals with which they live. Our readings ask us to consider who we are and how we should live—but their focus is on what it means to be part of this natural world. We read within and without the canon—delving into writers such as Thoreau, Evelyn White, Muir, Dillard, Silko, Erdrich, Berry, Abbey, Lopez, Leopold, Ackerman, and Kimmerer.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Distinguish between connotation and denotation in investigations of meaning in texts
2. Demonstrate ability to use interpretive frameworks to investigate contextual meanings of literature
3. Demonstrate understanding of text and context as the bases of supporting a

literary interpretation

4. Recognize and appreciate rhetorical structures that help to create meaning and effect
5. Discover their own relationships to nature and be able to express that growing understanding in their own pieces of nature writing
7. Demonstrate an ability to contribute to collaborative learning projects and small group discussions
8. Appreciate, recognize, and distinguish the works of important nature writers
9. Understand the roles of race, gender, and other factors in determining approaches to nature

ENG 243 - Native American Autobiography

4 Credit(s)

This course will introduce students to a new way of seeing the world they live in as they read the lives of Native Americans written by themselves. Autobiographies studied will range from early historical works narrated and translated by anthropologists to modern works by Linda Hogan and N. Scott Momaday. These texts will be studied in their historical contexts, as well as their cultural contexts. Speakers and films will play an important role in this course. The goal of the class is to present a fuller picture of the voices and visions of Native Americans.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Discuss the interconnectedness of culture, literary works, and anthropology.
2. Understand the importance of studying the personal along with traditional ways of seeing.
3. Use critical thinking skills to understand the effects of race and gender on society.
4. Distinguish between connotation and denotation and demonstrate how connotative language helps shape major aspects of the literary tradition.
5. Demonstrate ability to use interpretive frameworks to investigate contextual meanings of literature.

ENG 244 - Asian American Literature

4 Credit(s)

The course will familiarize students with literature from a variety of genres written by Asian American authors. The course may also engage students with materials written by American writers of Pacific Islander ancestry. Students will consider such literature in its aesthetic, historical, cultural, political, and social contexts. The class will also examine recurring themes regarding the development of attitudes, values, and identities as expressed within the body of literature.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Identify recurring themes in Asian American literature specifically and American literature generally
2. Identify the experiences and history that inform Asian American literature
3. Reference a framework for thinking about race, identity, culture, society, and literature
4. Identify significant texts and authors of Asian American literature
5. Critically analyze literary texts through a practice of close reading
6. Demonstrate ability to use interpretive frameworks to investigate contextual meanings of literature

ENG 250 - Introduction to Folklore and Mythology

4 Credit(s)

The nature and formal principles of studying folklore and myth will be introduced and illustrated through a variety of texts, folk artifacts, and thematic ideas, including world-wide examples that extend beyond Western cultures. Students will examine folkloric elements in their own and each other's backgrounds, as well as textbook examples of folklore and folk life from regional, ethnic, age, gender, or work groups. Students will consider how myth informs their own and each other's backgrounds, as well as examine textbook examples of myth and mythic themes, motifs, and archetypes from regional, ethnic, age, gender, or work groups. The course will introduce students to formal approaches to a variety of folklore and myths, as well as explore the relationship between myth, culture, and society. Folklore and myth will also be considered from a cross-cultural perspective.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Identify characteristics and functions of folklore, folk groups, and myth
2. Recognize the above characteristics and functions in a wide variety of folklore and myth as presented from various regional, religious, ethnic, age, gender, and work groups

3. Observe folkloric and mythic elements in mass/mainstream U.S. culture, past and present
4. Identify folkloric and mythic elements in their own lives and the lives of the people around them
5. Recognize the processes through which folklore and myth survive and are transmitted
6. Identify folkloric and mythic elements in published fictional and non-fictional texts. Acquire a cross-cultural understanding of human experiences
7. Be familiar with the basic elements, practices, and assumptions involved in collecting an oral history or oral narrative

ENG 253 - Survey of American Literature

4 Credit(s)

This course acquaints students with representative works of important American writers, literary forms, and significant currents of thought. Primary emphasis is on reading and engaging with the literary materials, with an introduction to practices of literary interpretation. Questions of genre, authorship, aesthetics, and literary movements may be examined in their relationships to social, political, and intellectual movements of the United States. The course will draw on material produced prior to the American Civil War period.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Read and comprehend a variety of genres from diverse American literary traditions created prior to the Civil War
2. Use close reading and interpretive frameworks to examine relationships between texts and their social, historical, cultural and literary contexts
3. Explore how the literature reflects and shapes perceptions of critical social issues such as slavery, treatment of Native Americans, and the rights of women
4. Demonstrate awareness of the power and nuance of language: distinguish between denotative and connotative meanings in texts; use textual evidence to support interpretive claims about literary works
5. Contribute to collaborative learning through formal and informal writing and discussion forums and/or creative projects

ENG 254 - Survey of American Literature

4 Credit(s)

This course acquaints students with representative works of important American writers, literary forms, and significant currents of thought. Primary emphasis is on reading and engaging with the literary materials, with an introduction to practices of literary interpretation. Questions of genre, authorship, aesthetics, and literary movements may be examined in their relationships to social, political, and intellectual movements of the United States. The course will draw on material produced after the American Civil War period.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Read and comprehend a variety of genres from diverse American literary traditions created during and after the Civil War
2. Use close reading and interpretive frameworks to examine relationships between texts and their social, historical, cultural and literary contexts
3. Explore how literature reflects and shapes perceptions of critical social issues such as racism, attitudes toward immigrants, and the rights of women
4. Demonstrate awareness of the power and nuance of language: distinguish between denotative and connotative meanings in texts
5. Contribute to collaborative learning through formal and informal writing and discussion forums and/or creative projects. Use textual evidence to support interpretive claims about literary works

ENG 257 - The American Working Class in Fiction and Non-Fiction

4 Credit(s)

Using the concept of the "American Dream" to examine work, class, and social mobility, students will learn to appreciate the power of class in shaping individual lives and our culture. There is a prevailing belief in America that we are a "classless" society, but this course interrogates this concept. Through critical examination of a variety of works of fiction and non-fiction, students will explore ways that the inequalities of class, ethnicity, race, and gender interrelate to sustain the power and interests of economic elites.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Read and critically analyze texts that represent working class lives—including films, essays, poetry, stories, images, and songs
2. Write and think critically about class as part of the production of a research-

based project

3. Analyze the various strategies producers of texts use to explore and represent the role of class status and work on the individual consciousness and experience
4. Examine how textual representations of class intersect with issues of race, ethnicity, gender, national origin, sexuality, and other identity categories
5. Identify specific strategies employed by writers/filmmakers to represent the opportunities and limitations of different class positions, as well as to interrogate the social and economic structures that support the existence of the class based system
6. Interrogate the invisibility of working class values and lives in popular culture and academics in order to suggest alternative perspectives on these spaces viewed through the lens of working class concerns
7. Engage from a literary perspective what it means to be working class in the United States with particular attention to the relative risks and benefits of different kinds of work and the potential for developing alternative economic systems

ENG 260 - Introduction to Women Writers

4 Credit(s)

This course will introduce students to the richness and variety of literary works written by women over the course of several centuries. Issues that concern women writers, the impact of stories, and how class, race, and gender work to construct the stories we live by will be central to the course. Critical thinking will play a role as students consider literature written by a range of women writers in a global context. The course will include an introduction to feminist literary theory and will introduce students to a variety of literary genres and styles.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Understand the social, political, and cultural contexts within which women have written historically and presently
2. Demonstrate an understanding of the relationship between writing and female identity
3. Demonstrate an understanding of the role that class and racial divides play in women's writing and the category of "women's writing"
4. Demonstrate an understanding of the ways in which women represent themselves in history
5. Demonstrate an ability to distinguish between connotation and denotation and demonstrate how the connotative language helps shape major points of a literary text (poem, story, play)
6. Demonstrate ability to use interpretive frameworks to investigate contextual meanings of literature

ENG 261 - Science Fiction

4 Credit(s)

This course examines science fiction from a diverse range of time periods, authors, subgenres, and forms. Students will understand science fiction as engaging with both the realities of the present and the possibilities of the future, taking seriously not only its status as a literary genre but also the social, political, and philosophical questions it raises.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Read, comprehend, and respond to a diverse range of science fiction texts
2. Use close reading and interpretive frameworks to examine relationships between texts and their social, historical, cultural and literary contexts
3. Think critically about, engage with, and develop stances on the social, political, and philosophical questions raised by science fiction texts
4. Demonstrate awareness of the power and nuance of language: distinguish between denotative and connotative meanings in texts
5. Use detailed textual evidence to support interpretive claims about science fiction texts
6. Contribute to collaborative learning through formal and informal writing, discussions, and/or creative projects

ENG 270 - Bob Dylan: American Poet

4 Credit(s)

All winners of the Nobel Prize in Literature deserve a course of their own, perhaps—but only Bob Dylan has one at Lane. In 2016 the Nobel Committee awarded Dylan the prize "for having created new poetic expressions within the great American song tradition." In this literature course, we examine the relationship between texts and the traditions from which they sprout: Dylan's masterful songs have deep roots in American blues, English and American folk songs, British Romantic poetry, and even Greek and Roman classics. How poems

work, the relationship between sound/song and lyrics, and the possibilities of meaning in Dylan's work are our main themes.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Distinguish between connotation and denotation in investigating meaning in texts
2. Use interpretive frameworks to investigate contextual meanings of literature
3. Understand the roles of text and context as the bases of supporting a literary interpretation
4. Contribute to collaborative learning projects and small group discussions
5. Understand Dylan's relationship to American musical traditions, American history, and contemporary American society
6. Appreciate and understand shifts in academic canonicity, and the value of song as literature

ENG 282 - Introduction to Comics-Graphic Novels

4 Credit(s)

This course introduces students to the academic study of comics and graphic novels, focusing on these forms as literary productions, asking questions about how and why these forms are written and read. Students will encounter a variety of comics and graphic novel forms with an international, historical, and critical perspective on the art of editorial cartoons, comics, comic books, and graphic novels and how they communicate, inform, and emotionally engage audiences.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Identify different genres and subgenres of comics and graphic novels. Recognize conventions of the form
2. Recognize graphic genres' influence on popular culture by identifying analogous visual/verbal configurations to course texts
3. Situate course texts within their cultural, political, and historical contexts
4. Recognize and relate how visual/verbal representation can communicate the struggles
5. Recognize, differentiate and relate the various forms of graphic storytelling and comics art and interpret the layers of meaning produced by visual/verbal elements; understand and relate the historical and cultural contexts that create or influence graphic and comic art forms
6. Describe, compare, and classify different forms of graphic storytelling encountered in the class and relate their aesthetic, cultural, or historical meaning
7. Perform formal analyses of a narrative medium that combines visual and verbal elements in a unique way
8. Analyze how the visual and verbal elements combine to produce complex meaning that is distinct from that produced in genres that use words only

English as a Second Language (Community Program)

ESL XESC 05160 - ESL Combined Skills Level 0

5 Hours per week

This course focuses on developing basic English language skills. Students will use English in basic, everyday functions and personal interactions, communicate in both written and spoken English to give simple information about self. Students will use English to have brief, routine conversations with some effort and support, read very simple and familiar words on familiar subjects and write common words.

Learning Outcomes

At the end of this course, and with support, students will be able to:

1. Communicate: Speak and write simple information about familiar topics, experiences, or events. (about self, classroom, locations, family, food, the house, city places etc...)
2. Use Vocabulary: Identify and apply a few frequently occurring words, simple phrases, and common expressions in English when speaking, reading or writing. about familiar topics, experiences, or events
3. Use Grammar: Produce simple sentences about familiar topics, experiences, or events
4. Interact: Ask and respond with simple phrases to basic questions about familiar topics and texts
5. Learn and Present: Collect simple information from interactions, and from print and digital readings. Label and report the important information
6. Use Technology: Utilize digital tools to learn English, gather information, and communicate for school, life and work
7. Demonstrate Study and Workplace Skills: Employ teamwork and show respect

for others. Keep materials organized and practice a positive attitude to complete assignments independently and with classmates in a timely manner

ESL XESC 05161 - ESL Combined Skills Level 1

5 Hours per week

This course focuses on continuing to develop basic English language skills. Students will use English in basic, everyday functions and personal interactions, communicate in both written and spoken English to give simple information about self. Students will use English to have brief, routine conversations with some effort, read very simple and familiar or patterned sentences on familiar subjects and write common words and phrases.

Learning Outcomes

At the end of this course, and with support, students will be able to :

1. Communicate: Speak and write basic information about familiar texts, topics, and experiences, and express feelings
2. Use Vocabulary: Identify and apply a few frequently occurring words, simple phrases, and formulaic expressions in English when speaking, reading or writing about familiar topics, experiences, or events
3. Use Grammar: Produce simple sentences about familiar topics, experiences, or events
4. Interact: Ask and appropriately respond to basic questions about familiar topics and texts
5. Learn and Present: Collect information from interactions, and from print and digital readings. Label and report the important information
6. Use Technology: Utilize digital tools to learn English, gather information, and communicate for school, life and work
7. Demonstrate Study and Workplace Skills: Employ teamwork and show respect for others. Keep materials organized and practice a positive attitude to complete assignments independently and with classmates in a timely manner

ESL XESL 05161 - ESL Grammar & Literacy Level 1

5 Hours per week

The course is designed to develop skills and strategies in literacy and study skills, with a focus on writing more fluently and with more confidence, improved spelling, grammar usage and structure, and vocabulary development.

Learning Outcomes

At the end of this course, and with support, students will be able to:

1. Communicate: Speak and write basic information about familiar texts, topics, and experiences, and express feelings
2. Use Vocabulary: Identify and apply a few frequently occurring words, simple phrases, and formulaic expressions in English when speaking, reading or writing about familiar topics, experiences, or events
3. Use Grammar: Produce simple sentences about familiar topics, experiences, or events
4. Interact: Ask and appropriately respond to basic questions about familiar topics and texts
5. Learn and Present: Collect information from interactions, and from print and digital readings. Label and report the important information
6. Use Technology: Utilize digital tools to learn English, gather information, and communicate for school, life and work
7. Demonstrate Study and Workplace Skills: Employ teamwork and show respect for others. Keep materials organized and practice a positive attitude to complete assignments independently and with classmates in a timely manner

ESL XESC 05162 - ESL Combined Skills Level 2

5 Hours per week

This course focuses on continuing to develop basic English language skills. Students will use English to have brief, routine conversations, read simplified texts, write simple sentences related to daily needs and use digital tools and devices to advance study and workplace skills.

Learning Outcomes

At the end of this course, and with support as needed, students will be able to :

1. Communicate: Speak and write basic information about familiar readings, topics, and experiences and express feelings and opinions
2. Use Vocabulary: Identify and apply common words, phrases, and expressions correctly in English when speaking, reading or writing about familiar topics, experiences, or events
3. Use Grammar: Produce simple sentences about familiar topics, experiences, or events

4. Interact: Ask and appropriately respond to basic questions about familiar topics and texts
5. Learn and Present: Collect information from interactions, and from print and digital readings. Label and report the important information
6. Practice Cultural Norms: Use formal and informal language in familiar contexts appropriately
7. Use Technology: Utilize digital tools to learn English, gather information, and communicate for school, life and work
8. Demonstrate Study and Workplace Skills: Employ teamwork and show respect for others. Keep materials organized and practice a positive attitude to complete assignments independently and with classmates in a timely manner

ESL XESC 05163 - ESL Combined Skills Level 3

5 Hours per week

This course focuses on developing high beginning English language skills. At the end of the course, students should be able to use English to have brief conversations on familiar topics, read short texts with clear organization, tables, graphs, maps and diagrams, write short paragraphs on familiar and high interest topics and use digital tools and devices to advance study and workplace skills.

Learning Outcomes

At the end of this course, and with support as needed, students will be able to :

1. Communicate Information: Write and/or orally present short narratives or information, including simple introductory/concluding statements and supported claims/facts, about familiar texts, topics, experiences, or events
2. Explain an idea: Identify the main argument and at least one reason an author or a speaker gives to support the argument
3. Practice Cultural Norms: Distinguish between informal and formal language use; adapt language choices to task and audience with emerging control in various social and academic contexts
4. Use Vocabulary: Identify and apply frequently occurring words, some general academic and content-specific words, phrases, and expressions in spoken and written texts about familiar topics, experiences, or events
5. Use Grammar: Produce meaningful and intelligible simple and compound sentences
6. Interact: Engage in conversations and written exchanges about familiar topics and texts, demonstrating appropriate turn-taking and question response
7. Learn and Present: Gather information from provided print and digital sources and interactions with others, record key information in simple notes, and summarize data and information
8. Use Technology: Utilize digital tools to learn English, gather information, and communicate for school, life and work
9. Demonstrate Study and Workplace Skills: Employ teamwork and show respect for others. Keep materials organized and practice a positive attitude to complete assignments independently and with classmates in a timely manner

ESL XESC 05164 - ESL Combined Skills Level 4

5 Hours per week

This course focuses on developing low intermediate English language skills and on the rights and responsibilities of community membership. Students will engage in fluent conversations on familiar topics, and provide a short narrative. Students will also identify main ideas, details, and some implied meaning in extended conversations, read a range of increasingly elaborated texts, write texts to address work and family purposes and use digital tools and devices to advance study and workplace skills.

Learning Outcomes

At the end of this course, and with support as needed, students will be able to:

1. Communicate Information: With support, deliver short oral presentations and compose written informational texts about events by developing the topic with a few details
2. Explain Ideas: With support, recount a sequence of events, with a beginning, middle, and end and introduce and develop an informational topic with facts and details, use common transitional words and phrases to connect events, ideas, and opinions, and provide a conclusion
3. Construct Claims: Construct a claim or argument about a familiar topic, introduce the topic, provide sufficient reasons or facts to support the claim, and provide a concluding statement

4. Understand Central Ideas: With support, explain the reasons an author or a speaker gives to support a claim and identify one or two reasons an author or a speaker gives to support the main point
5. Practice Cultural Norms: Adapt language choices and style according to purpose, task, and audience with developing ease in various social and academic contexts and show developing control of style and tone in spoken and written texts
6. Use Vocabulary: Use context, questioning, and a developing knowledge of English in order to determine the meaning and use of general academic and content-specific words and phrases and frequently occurring expressions in spoken and written texts about familiar topics, experiences, or events
7. Use Grammar: With support, use simple phrases and clauses to produce and expand simple, compound, and a few complex sentences
8. Interact: Participate in conversations, discussions, and written exchanges about familiar topics, texts, and issues. demonstrating appropriate turn-taking and question response
9. Learn and Present: With support, carry out short research projects to answer a question. This includes finding a central idea or theme in oral presentations and spoken and written texts, retelling key details, answering questions, explaining the theme and summarizing part of a text using strategies being learned in the course
10. Use Technology: With support, utilize digital tools to learn English, gather information, and communicate for school, life and work
11. Demonstrate Study and Workplace Skills: Build on the ideas of others, express ideas, ask and answer relevant questions, add relevant information and evidence, restate some of the key ideas expressed, follow rules for discussion, and ask questions to gain information or clarify understanding
10. Learn and Present: Carry out research projects to answer a question. This includes finding a central idea or theme in oral presentations and spoken and written texts, retelling key details, answering questions, explaining the theme and summarizing texts using learning strategies
11. Use Technology: With support, utilize digital tools to learn English, gather information, and communicate for school, life and work
12. Demonstrate Study and Workplace Skills: Build on the ideas of others, express ideas, ask and answer relevant questions, add relevant information and evidence, restate some of the key ideas expressed, follow rules for discussion, and ask questions to gain information or clarify understanding

ESL XESC 05166 - ESL Combined Skills Level 6

5 Hours per week

This course focuses on preparing students to access and use resources in the community and at the college to successfully transition to work, college or workplace training. Activities include guest speakers, field trips, college advising, job shadowing, internships, volunteering, and career exploration. Students will participate in conversations with ease and fluency, listen to detailed presentations, read everyday work and community documents with ease. Also students will write a range of simple and functional and narrative texts for work and community purposes and use digital tools and devices in educational and workplace settings.

Learning Outcomes

At the end of this course, and with support as needed, students will be able use English to:

1. Communicate Information: Deliver oral presentations and compose written informational texts about a variety of topics including educational, life enrichment and career related topics using evidence to support ideas
2. Identify Central Ideas and Claims: Find a central idea, theme or claim in spoken and written texts, retelling key details, answering questions, explaining the theme and summarizing using learning strategies. Explain and identify the reasons an author or a speaker gives to support a claim and identify counterclaims
3. Explain Central Ideas: Describe a sequence of events or steps in a process, with a clear sequential or chronological structure, and develop an informational topic with facts and details, use transitional words and phrases to connect events, ideas, and opinions, and provide a conclusion
4. Construct Claims: Construct a claim or argument about life, career and educational related topic introducing the topic, providing sufficient reasons or facts to support the claim, and providing a concluding statement
5. Summarize: Identify important details and evidence from texts and oral presentations and summarize a text
6. Practice Cultural Norms: Adapt language choices and style according to purpose, task, and audience with developing ease in various workplace, social and academic contexts and demonstrate minimal control of style and tone in spoken and written texts
7. Use Vocabulary: Use context, questioning, and a developing knowledge of English in order to determine the meaning and use of workplace, academic and content-specific words and phrases, figurative language and idioms in spoken and written texts about a career or educational related topics, experiences, or events
8. Use Grammar: Use simple phrases and clauses to produce, simple, compound, and complex sentences
9. Interact: Participate in extended conversations, discussions, and written exchanges about life, career and educational related topics and issues demonstrating appropriate turn-taking, asking and answering questions and summarizing information
10. Learn and Present: Carry out research projects to answer a question related to life enrichment, career or education
11. Use Technology: With support, utilize digital tools to learn English, gather information, and communicate for school, life and work
12. Demonstrate Study and Workplace Skills: Build on the ideas of others, express ideas, ask and answer relevant questions, add relevant information and evidence, restate some of the key ideas expressed, follow rules for discussion, and ask questions to gain information or clarify understanding

ESL XESC 05165 - ESL Combined Skills Level 5

5 Hours per week

This course focuses on continued development of intermediate English language skills and on the rights and responsibilities of community membership. Students will participate in moderate-length conversations with increasing ease and fluency, listen to detailed presentations on work and community topics, read introductory academic texts, popular literary texts and everyday work and community documents. Students will write a range of simple and functional and narrative texts for work, community, family, academic, and creative purposes and use digital tools and devices to advance study and workplace skills.

Learning Outcomes

At the end of this course, and with support as needed, students will be able use English to:

1. Communicate Information: With support, deliver oral presentations and compose written informational texts about events and a variety of relevant topics by developing the topic with details
2. Explain Ideas: Describe a sequence of events or steps in a process, with a clear sequential or chronological structure. and develop an informational topic with facts and details, use transitional words and phrases to connect events, ideas, and opinions, and provide a conclusion
3. Construct Claims: Construct a claim or argument about a topic, introduce the topic, provide sufficient reasons or facts to support the claim, and provide a concluding statement
4. Summarize information: Identify important details and evidence from texts and oral presentations and summarize a short text or part of a longer text
5. Understand Central Ideas and Arguments: Explain the reasons an author or a speaker gives to support a claim or argument and identify reasons an author or a speaker gives to support the main point
6. Practice Cultural Norms: Adapt language choices and style according to purpose, task, and audience with developing ease in various social and academic contexts and show developing control of style and tone in spoken and written texts.
7. Use Vocabulary: Use context, questioning, and a developing knowledge of English in order to determine the meaning and use of general academic and content-specific words and phrases and frequently occurring idioms in spoken and written texts about a variety of topics, experiences, or events
8. Use Grammar: Use simple phrases and clauses to produce, simple, compound, and complex sentences
9. Interact: Participate in conversations, discussions, and written exchanges about a variety of relevant topics, texts, and issues. demonstrating appropriate turn-taking and question response

English as a Second Language (Intensive Program)

ESL XESC 0516A - ESL Basic Combined Skills Level A

10 Hours per week

Low Beginning-Beginning. This course focuses on reading, writing, speaking, listening and vocabulary development. Vocabulary development is practiced and reinforced in reading, writing, speaking, and listening.

Learning Outcomes

Students will participate in simple highly structured conversational exchanges with supportive listeners. They will acquire the vocabulary and reading skills necessary to comprehend simple texts and forms. Students will write 3 or more simple consecutive sentences about familiar and everyday topics. Students will write personal information correctly into simplified forms.

ESL XESR 0516A - ESL Reading and Oral Skills Level A

10 Hours per week

Beginning-High-Beginning. This course focuses on reading, writing, and vocabulary development. Vocabulary development is practiced and reinforced in reading and writing.

Learning Outcomes

Students will acquire the vocabulary and reading skills necessary to comprehend simple texts and forms. Students will write 5 or more simple consecutive sentences about familiar and everyday topics. Students will write personal information correctly into simplified forms.

ESL XESC 0516B - ESL Combined Skills Level B

10 Hours per week

High Beginning-Low-Intermediate. This course focuses on reading, speaking, listening and vocabulary development. Students will participate in simple conversational exchanges with supportive listeners. Vocabulary development is practiced and reinforced in reading, speaking, and listening. This course focuses on everyday and informational texts.

Learning Outcomes

Students will communicate accurately, fluently, and intelligibly in every day and informational contexts. They will acquire the vocabulary and reading skills necessary to comprehend every day and informational texts. They will also create and give oral presentations.

ESL XESR 0516B - ESL Reading and Oral Skills Level B

10 Hours per week

High Beginning-Low-Intermediate. This course focuses on reading, speaking, listening and vocabulary development. Students will participate in simple conversational exchanges with supportive listeners. Vocabulary development is practiced and reinforced in reading, speaking, and listening. This course focuses on everyday and informational texts.

Learning Outcomes

Students will communicate accurately, fluently, and intelligibly in every day and informational contexts. They will acquire the vocabulary and reading skills necessary to comprehend every day and informational texts. They will also create and give oral presentations.

ESL XESW 0516B - ESL Writing and Grammar Level B

10 Hours per week

Low Intermediate. This course focuses on sentence-level accuracy in written English in informative genres and simple directions.

Learning Outcomes

Students will be able to write a well-organized informational paragraph on a familiar topic with few grammatical or spelling errors. Students will write with the composition skills, fluency and vocabulary necessary to communicate effectively and recognize and correct errors in their writing.

ESL XESR 0516C - ESL Reading and Oral Skills Level C

10 Hours per week

Intermediate. This course focuses on reading, speaking, pronunciation, listening and vocabulary development. Students will participate in conversational exchanges and course discussion so others can understand. Vocabulary development is practiced and reinforced in reading, speaking, and listening. The course focuses on informational and academic texts.

Learning Outcomes

Students will communicate accurately, fluently, and intelligibly in basic community and emerging academic contexts. They will acquire the vocabulary and reading

skills necessary to comprehend basic academic texts. They will also create and give oral presentations and may read a simplified novel.

ESL XESW 0516C - ESL Writing and Grammar Level C

10 Hours per week

Low intermediate-intermediate. This course focuses on grammar development and extended paragraph writing in narrative and informative genres.

Learning Outcomes

Students will write a variety of extended paragraphs (e.g., descriptive, narrative, process and comparative) and one basic comparison-contrast essay with some variety of sentence types (simple and compound) with few grammatical or spelling errors. Students will construct an evidence-based extended paragraph and recognize and correct recurring errors in their writing.

ESL XESR 0516D - ESL Reading and Oral Skills Level D

10 Hours per week

Intermediate-High Intermediate. This course focuses on reading, speaking, listening and vocabulary development. Vocabulary development is practiced and reinforced in reading, speaking, and listening. This course focuses on academic, work, and community texts.

Learning Outcomes

Students will communicate accurately, fluently, and intelligibly in basic academic contexts. They will acquire the vocabulary and reading skills necessary to comprehend moderately complex academic texts. They will also create and present evidence-based and well-organized presentations.

ESL XESW 0516D - ESL Writing and Grammar Level D

10 Hours per week

Intermediate-High Intermediate. This course focuses on grammar development and basic essay writing in a variety of community and academic contexts.

Learning Outcomes

Students will write a variety of basic academic essays (advantages and disadvantages, narrative, and process) with a variety of sentence types (simple, compound, and basic complex) with few grammatical or spelling errors. Students will write with the composition skills, appropriate rhetoric, fluency and vocabulary necessary to communicate effectively and recognize and correct recurring errors in their writing.

ESL XESR 0516E - ESL - Academic Reading Level E

5 Hours per week

High Intermediate-Low Advanced. This course focuses on developing academic vocabulary as well as reading speed and comprehension of non-simplified texts. Students will also participate in a discussion forum about a novel. This course focuses on academic, work, and community texts.

Learning Outcomes

Students will acquire the vocabulary and reading skills necessary to comprehend authentic written materials around an academic content in English and consciously develop strategies, skills and vocabulary necessary to progress to the next level.

ESL XESS 0516E - ESL Academic Listening and Speaking Level E

5 Hours per week

High-Intermediate to Low-Advanced. This course is designed to prepare students for listening and speaking in academic and formal settings.

Learning Outcomes

Students will participate in moderate-length conversations, and communicate main ideas and related details in oral presentations about a variety of general, academic and/or workplace topics so others can understand. Students will use an increasingly wide range of academic and content-specific words and phrases, complex phrases and clauses, simple, compound and complex sentences and transitions to link ideas in speech. Students will also analyze the reasoning in persuasive spoken texts, understand spoken language with varying ease and accuracy, and speak with growing confidence and varied ease, accuracy, and control of grammar and vocabulary.

ESL XESW 0516E - ESL Academic Writing and Grammar Level E

10 Hours per week

High-Intermediate to Low-Advanced. This course focuses on intermediate to advanced grammar development and essay writing to help students of English build their academic English in order to be successful in college transition English.

Learning Outcomes

Students will write a variety of well-supported essays (cause-effect and compare-contrast) with evidence from basic research about academic topics with a variety of sentence types (simple, compound, and complex) with few grammatical or

spelling errors. Students will recognize recurring errors in their writing and write with the composition skills, appropriate rhetoric, fluency, and vocabulary necessary to communicate authentic academic writing tasks to a specialized audience. Students will also gain familiarity with various research tools and how to cite research in an academic context.

ESL XEBO 0516E - ESL Bridge Oral Skills Level E

5 Hours per week

This Academic English as a Second Language course supports academic success in COMM 115 - Introduction to Intercultural Communication by using the content of this 4-credit college course to work on skill development in the areas of reading, writing (including sentence structure), listening, speaking, and academic study skills. This course is designed for non-native speakers of English.

Learning Outcomes

By the end of the course, students will be better able to communicate accurately, fluently, and intelligibly in written and spoken academic contexts. They will acquire the vocabulary and reading skills necessary to comprehend complex academic texts. They will also create and present evidence-based presentations.

ESL XEBW 0516E - ESL Bridge Reading and Writing Level E

7 Hours per week

This Academic English as a Second Language course supports academic success in COMM 115 - Introduction to Intercultural Communication by using the content of this 4-credit college course to work on skill development in the areas of reading, writing (including sentence structure), listening, speaking, and academic study skills. This course is designed for non-native speakers of English.

Learning Outcomes

By the end of the course, students will be better able to communicate accurately, fluently, and intelligibly in written and spoken academic contexts. They will acquire the vocabulary and reading skills necessary to comprehend complex academic texts. They will also create and present evidence-based presentations.

ESL XEBO 0516F - ESL Bridge Oral Skills Level F

5 Hours per week

This college transition English as a Second Language course supports academic success in WR 121 - Academic Composition. The content of this 4-credit college course combined with ESL support allows students to work on skill development in the areas of reading, writing (including sentence structure), listening, speaking, and academic study skills. This course is designed for non-native speakers of English.

Learning Outcomes

By the end of the course, students will be better able to read academic texts with understanding, listen actively in academic settings, communicate accurately, fluently, and intelligibly in writing and speaking in college transition contexts. They will develop the vocabulary and reading skills necessary to comprehend complex academic texts, the writing skills necessary to produce evidence-based college transition level essays and other college writing requirements, the active listening skills to comprehend entry-level college lectures with specialized vocabulary and topic-related classroom discussion, and the speaking skills to create and present evidence based academic presentations and participate in academic discussion groups.

ESL XEBW 0516F - ESL Bridge Reading and Writing Level F

7 Hours per week

This college transition English as a Second Language course supports academic success in WR 121 - Academic Composition. The content of this 4-credit college course combined with ESL support allows students to work on skill development in the areas of reading, writing (including sentence structure), listening, speaking, and academic study skills. This course is designed for non-native speakers of English.

Learning Outcomes

By the end of the course, students will be better able to read academic texts with understanding, listen actively in academic settings, communicate accurately, fluently, and intelligibly in writing and speaking in college transition contexts. They will develop the vocabulary and reading skills necessary to comprehend complex academic texts, the writing skills necessary to produce evidence-based college transition level essays and other college writing requirements, the active listening skills to comprehend entry-level college lectures with specialized vocabulary and topic-related classroom discussion, and the speaking skills to create and present evidence based academic presentations and participate in academic discussion groups.

ESL XESR 0516F - ESL College Transition Reading Level F

5 Hours per week

Advanced. This course focuses on reading and vocabulary development. Vocabulary development is practiced and reinforced in reading and discussion. This course focuses on academic, work, and community texts.

Learning Outcomes

Students will acquire the vocabulary and reading skills necessary to comprehend complex academic texts. They will practice reading a variety of texts in different genres and learn how to navigate and comprehend a college catalog and a variety of academic syllabi typical of a first-year university course.

ESL XESW 0516F - ESL College Transition Writing and Grammar Level F

10 Hours per week

Low-Advanced to Advanced. This course focuses on advanced grammar development and essay writing to help students of English transition to an institute of higher learning in order to work on a degree or certification in a professional field.

Learning Outcomes

Students will write a variety of well-supported essays (classification-definition, problem-solution or persuasive) and a problem-solution research paper about academic topics with a variety of sentence types (simple, compound, and complex) with few grammatical or spelling errors. Students will recognize recurring errors in their writing and write with the composition skills, appropriate rhetoric, fluency, and vocabulary necessary to communicate authentic academic writing tasks to a specialized audience. Students will also gain familiarity with various research tools and how to cite research in an academic context.

ESL XESS 0516F - ESL College Transition Writing and Grammar Level F

5 Hours per week

This course is designed to prepare students for academic listening and speaking and draws heavily from the materials in the Reading/Vocabulary course and classroom observations.

Learning Outcomes

Students will participate in extended group research projects, and communicate main ideas and related details in oral presentations about a variety of informational topics, fully developing the topic and integrating graphics or multimedia so others can understand. Students will participate in academic discussions using a wide range of advanced academic vocabulary and content-specific words and phrases, a wide variety of complex phrases and clauses and produce and expand simple, compound and complex sentences using complex transitions. Students will also analyze the reasoning in persuasive spoken texts. By the end of this level, students will be able to understand main ideas in academic lectures and understand spoken language comfortably, function in courses with native speakers, and speak at near-natural pace with only occasional pronunciation, word choice, or grammar errors.

ESL XESS 05160 - English Pronunciation

2.5 Hours per week

This noncredit course is designed to help English language learners of all levels to improve their pronunciation skills in English. The class will raise awareness of the features of standard American English Pronunciation including consonant and vowel sounds, stress, rhythm, intonation, and connected speech. Through a variety of listening and speaking activities, students will practice adding these linguistic patterns to their speech and learn how to monitor their speech in order to communicate effectively.

Learning Outcomes

Upon successful completion of this course, the student will be able to:
1. Use knowledge of pronunciation, stress, rhythm, and intonation to aid comprehension and intelligibility

Ethnic Studies

ES 101 - Historical Racial and Ethnic Issues

4 Credit(s)

This course explores the nature and complexity of racial and ethnic diversity in U.S. society. Using current developments in ethnic studies scholarship, we will examine the social construction of race and ethnicity, theories of prejudice, and a historical overview of various ethnic and racial groups. The course concludes with a comparative analysis of the intersection between race, class, and gender. ES 101 and ES 102 do not have to be taken in sequence.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior: Use critical thinking skills to understand the effects of historical examples of inequality around race, class, and gender and its' impact on society.
2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live: Develop a deeper understanding of one's own culture as well as learning about the cultures of others.
3. Understand the role of individuals and institutions within the context of society: This ethnic studies course uses multiple methods, and techniques to allow students to constantly find themselves and their stories within the context of the society in which we are exploring. By inserting themselves into the narrative, they can greater understand and critically analyze the relationship between the individual and societal institutions.
4. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry: Ethnic Studies is an interdisciplinary and multidisciplinary field of study. This Ethnic Studies course borrows from multiple fields, using a wide range of theoretical foundations and methods of inquiry, on which to build the student's understanding of the material covered in this course.
5. Utilize appropriate information literacy skills in written and oral communication: The webpage of Ethnic Studies appears on all course syllabi. Students are encouraged to use the webpage as a foundation to explore the complexities of the discipline. Students are also assigned class exercises that require them to explore web-based materials. Lastly, students are offered extra credit for exploring all forms of media resources for material related to this course.
6. Understand the diversity of human experience and thought, individually and collectively: This Ethnic Studies course engages in the critical analysis of why people (all people of all sub-groups within society) act the way that they do, both as individuals and within the context of social groups and institutions.
7. Apply knowledge and skills to contemporary problems and issues: Although the primary focus of this course is within a historical context, the course still engages in a free flowing comparison between historical and contemporary society. Context in understanding contemporary social phenomenon does not exist without a historical analysis.

ES 102 - Contemporary Racial and Ethnic Issues

4 Credit(s)

This course explores the nature and complexity of racial and ethnic diversity in U.S. society. Using current developments in ethnic studies scholarship, we will examine multiple sources of discrimination, and how discrimination impacts self and society. We will also review the contemporary and experiences and issues facing various ethnic and racial groups. The course concludes with strategies for overcoming exclusion. ES 101 and ES 102 do not have to be taken in sequence.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior: Use critical thinking skills to understand the effects of historical examples of inequality around race, class, and gender and its' impact on contemporary society.
2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live: Develop a deeper understanding of one's own culture as well as learning about the cultures of others.
3. Understand the role of individuals and institutions within the context of society: This ethnic studies course uses multiple methods, and techniques to allow students to constantly find themselves and their stories within the context of the society in which we are exploring. By inserting themselves into the narrative, they can greater understand and critically analyze the relationship between the individual and societal institutions.
4. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry: Ethnic Studies is an interdisciplinary and multidisciplinary field of study. This Ethnic Studies course borrows from multiple fields, using a wide range of theoretical foundations and methods of inquiry, on which to build the student's understanding of the material covered in this course.
5. Utilize appropriate information literacy skills in written and oral communication: The webpage of Ethnic Studies appears on all course syllabi. Students are encouraged to use the webpage as a foundation to explore the complexities of the discipline. Students are also assigned class exercises that require them to explore

web-based materials. Lastly, students are offered extra credit for exploring all forms of media resources for material related to this course.

6. Understand the diversity of human experience and thought, individually and collectively: This Ethnic Studies course engages in the critical analysis of why people (all people of all sub-groups within society) act the way that they do, both as individuals and within the context of social groups and institutions.
7. Apply knowledge and skills to contemporary problems and issues: Although the primary focus of this course is within a historical context, the course still engages in a free flowing comparison between historical and contemporary society. Context in understanding contemporary social phenomenon does not exist without a historical analysis.

ES 199NA - Native American Leadership: Contemporary Leadership in Indigenous Communities

4 Credit(s)

The course is designed to explore the history, philosophy, and methods of modern-day leadership in indigenous communities. Students will examine the late 20th and 21st century indigenous civil rights, ecological, and cultural movements that have shaped contemporary society. This course focuses on indigenous leadership theory; foundations of indigenous leadership; and contemporary indigenous leadership in practice.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Understand theory and principles of decolonized leadership.
2. Demonstrate practical and personal usage of the concepts and strategies learned to affect positive social change.
3. Apply concepts of "grassroots" leadership learned in this course to develop and enhance personal problem-solving skills.

ES 212 - Chicano/Latino Studies: Political and Ideological Perspectives

4 Credit(s)

This course examines the efforts of Mexican Americans to achieve equality and self-determination through the twentieth century. Special attention will be paid to the emergence of multiple ideological and culturally nationalistic social justice movements that evolved into a unifying Chicano Movement of the late 1960s and early 70s. Finally, this course explores the continuing evolution and emergence of contemporary Chicano/Latino social justice movements.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior: Use critical thinking skills to understand the effects of historical examples of inequality around race, class, and gender and its' impact on the Chicano/Latino community and within the context of the greater contemporary society.
2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live: Develop a deeper understanding of one's own culture as well as learning about the cultures of others.
3. Understand the role of individuals and institutions within the context of society: This ethnic studies course uses multiple methods, and techniques to allow students to constantly find themselves and their stories within the context of the society in which we are exploring. By inserting themselves into the narrative, they can greater understand and critically analyze the relationship between the individual and societal institutions.
4. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry: Ethnic Studies is an interdisciplinary and multidisciplinary field of study. This Ethnic Studies course borrows from multiple fields, using a wide range of theoretical foundations and methods of inquiry, on which to build the student's understanding of the material covered in this course.
5. Utilize appropriate information literacy skills in written and oral communication: The webpage of Ethnic Studies appears on all course syllabi. Students are encouraged to use the webpage as a foundation to explore the complexities of the discipline. Students are also assigned class exercises that require them to explore web-based materials. Lastly, students are offered extra credit for exploring all forms of media resources for material related to this course.
6. Understand the diversity of human experience and thought, individually and collectively: This Ethnic Studies course engages in the critical analysis of why people (all people of all sub-groups within society) act the way that they do, both

as individuals and within the context of social groups and institutions. Within the focus of this particular course: the Chicano/Latino population.

7. Apply knowledge and skills to contemporary problems and issues: Although the primary focus of this course is within a historical context, the course still engages in a free flowing comparison between historical and contemporary society. Context in understanding contemporary social phenomenon does not exist without a historical analysis.

ES 213 - Chicano/Latino Studies: Contemporary Identity and Cultural Issues

4 Credit(s)

This course explores the historical and contemporary identity/cultural issues affecting the largest Latino communities in the United States. We will review theories of ethnic identity development, as well as the social and political construction of 'race'. This course also examines how U.S. foreign policy in Latin America has influenced perceptions within and outside of the Latino community. Finally, we review the use of pan-ethnic labels and their function in the construction of an all-encompassing Hispanic Nation.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior: Use critical thinking skills to understand the effects of historical examples of inequality around race, class, and gender and its' impact on the Chicano/Latino community and within the context of the greater contemporary society.
2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live: Develop a deeper understanding of one's own culture as well as learning about the cultures of others.
3. Understand the role of individuals and institutions within the context of society: This ethnic studies course uses multiple methods, and techniques to allow students to constantly find themselves and their stories within the context of the society in which we are exploring. By inserting themselves into the narrative, they can greater understand and critically analyze the relationship between the individual and societal institutions.
4. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry: Ethnic Studies is an interdisciplinary and multidisciplinary field of study. This Ethnic Studies course borrows from multiple fields, using a wide range of theoretical foundations and methods of inquiry, on which to build the student's understanding of the material covered in this course.
5. Utilize appropriate information literacy skills in written and oral communication: The webpage of Ethnic Studies appears on all course syllabi. Students are encouraged to use the webpage as a foundation to explore the complexities of the discipline. Students are also assigned class exercises that require them to explore web-based materials. Lastly, students are offered extra credit for exploring all forms of media resources for material related to this course.
6. Understand the diversity of human experience and thought, individually and collectively: This Ethnic Studies course engages in the critical analysis of why people (all people of all sub-groups within society) act the way that they do, both as individuals and within the context of social groups and institutions. Within the focus of this particular course: the Chicano/Latino population.
7. Apply knowledge and skills to contemporary problems and issues: Although the primary focus of this course is within a historical context, the course still engages in a free flowing comparison between historical and contemporary society. Context in understanding contemporary social phenomenon does not exist without a historical analysis.

ES 221 - African American Studies: Down from the Pyramids, Up from Slavery

4 Credit(s)

The focus of this course is on African, Afro-European, Afro-Native American, Caribbean, South and North American Maroon societies. In this course we examine various cultural constructs through which Africans in America understand and influence the world. The chronology of this course encompasses Dynastic Egypt, pre-European Conquest Africa, pre-Columbian America, to Post Reconstruction America 1877. ES 221 and 223 examine culture, identity, gender and women's roles, economics, and African and Native American responses to systematic oppression towards goals of individual and group liberation.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior: Use critical thinking skills to understand the effects of historical examples of inequality around race, class, and gender and its' impact on society.
2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live: Develop a deeper understanding of one's own culture as well as learning about the cultures of others.
3. Understand the role of individuals and institutions within the context of society: Although this course focuses on Africans, Afro-Europeans, Afro-Native Americans, Caribbean, South and North American Maroon societies, this ethnic studies course uses multiple methods, and techniques to allow all students to constantly find themselves and their stories within the context of the society in which we are exploring. By inserting themselves into the narrative, they can greater understand and critically analyze the relationship between the individual and societal institutions.
4. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry: Ethnic Studies is an interdisciplinary and multidisciplinary field of study. This Ethnic Studies course borrows from multiple fields, using a wide range of theoretical foundations and methods of inquiry, on which to build the student's understanding of the material covered in this course.
5. Utilize appropriate information literacy skills in written and oral communication: The webpage of Ethnic Studies appears on all course syllabi. Students are encouraged to use the webpage as a foundation to explore the complexities of the discipline. Students are also assigned class exercises that require them to explore web-based materials. Lastly, students are offered extra credit for exploring all forms of media resources for material related to this course.
6. Understand the diversity of human experience and thought, individually and collectively: This Ethnic Studies course engages in the critical analysis of why human groups (all people of all sub-groups within society) act the way that they do, both as individuals and within the context of social groups and institutions.
7. Apply knowledge and skills to contemporary problems and issues: Although the primary focus of this course is within a historical context, the course still engages in a free flowing comparison between historical and contemporary society. Context in understanding contemporary social phenomenon does not exist without a historical analysis.

ES 223 - African American Studies: A Luta Continua: The Struggle Continues

4 Credit(s)

Contemporary African, Afro-European, Afro-Native American, Caribbean, and Africans in South and North America are examined in this course. The chronology of this course encompasses World War II to the present and confronts issues such as prison incarceration rates, the 'War on Drugs', Affirmative Action backlash, and Multiculturalism, as well as the cultural influences of gospel, jazz, rock and roll, and liberation movements. ES 221 and 223 examine culture, identity, gender and women's roles, economics, and African and Native American responses to systematic oppression towards goals of individual and group liberation.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior: Use critical thinking skills to understand the effects of historical examples of inequality around race, class, and gender and its' impact on society.
2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live: Develop a deeper understanding of one's own culture as well as learning about the cultures of others.
3. Understand the role of individuals and institutions within the context of society: Although this course focuses on Africans, Afro-Europeans, Afro-Native Americans, Caribbean, South and North American Maroon societies, this ethnic studies course uses multiple methods, and techniques to allow all students to constantly find themselves and their stories within the context of the society in which we are exploring. By inserting themselves into the narrative, they can greater understand and critically analyze the relationship between the individual and societal institutions.
4. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry: Ethnic Studies is an interdisciplinary and multidisciplinary field of study. This Ethnic Studies course borrows from multiple fields, using a wide range of theoretical foundations and methods of inquiry, on which to build the student's understanding of the material covered in this course.

5. Utilize appropriate information literacy skills in written and oral communication: The webpage of Ethnic Studies appears on all course syllabi. Students are encouraged to use the webpage as a foundation to explore the complexities of the discipline. Students are also assigned class exercises that require them to explore web-based materials. Lastly, students are offered extra credit for exploring all forms of media resources for material related to this course.

6. Understand the diversity of human experience and thought, individually and collectively: This Ethnic Studies course engages in the critical analysis of why human groups (all people of all sub-groups within society) act the way that they do, both as individuals and within the context of social groups and institutions.

7. Apply knowledge and skills to contemporary problems and issues: Although the primary focus of this course is within a historical context, the course still engages in a free flowing comparison between historical and contemporary society. Context in understanding contemporary social phenomenon does not exist without a historical analysis.

ES 224 - Black Male Studies: Lies, Literature, and Legacy

4 Credit(s)

Black Male Studies humanizes Black males and challenges the pathological accounts held about Black males. Furthermore, Black Male Studies attempts to impart nuance, problematize, and critically question the hegemonic characterizations of Black Males. This course will: (1) introduce students with 19th century ethnology, (2) explore the various accounts of the sexual violence of Black men during slavery and the Jim Crow period by white men and women, (3) utilize empirical findings concerning Black males' actual gender attitudes and activism concerning fatherhood in the 20th and 21st century, and (4) present the various terms and theories found within the literature as applied to the situation of Black males, such as social dominance theory, C.R.I.S.H.I.S. (Constructed Racialized Identity Sustained Hegemonically In Systems), RBF (Racial Battle Fatigue).

Learning Outcomes

Students who successfully complete this course will be able to:

1. Students will be able to explain the context and complexity of the broad realities and individual experiences of Black males from various frameworks that empirically illustrate the realities of Black males
2. Students will be able to describe some of the real-life perspectives of Black males
3. Students will be able to define and identify the behaviors and structures of heteronormativity, toxic (hegemonic) masculinity, and patriarchy in relationship with Black males
4. Students will be able to construct appropriate and defensible reasoning in order draw conclusions on myths and negative stereotypes when studying Black males
5. Outline the effects of systems of class, race, and gender on society
6. Exercise socially responsibility and decision- making that values the various ideologies, orientations, cultures, and backgrounds of Black males
7. Students will be able to illustrate, reason and research pathological tropes associated Black Males

ES 241 - Native American Studies: Consequences of Native American and European Contact

4 Credit(s)

This course deals with Native Americans and Alaskan Native cultures and history, both prior to and immediately following, contact with Europeans during the past five hundred years. The course is divided into two general segments: First, the course will explore Native cultures in their traditional settings, before the arrival of outsiders. It surveys the great diversity of lifestyles, belief systems, languages, social and political structures, and creative expressions, which characterize the numerous tribal communities of the North American continent. Second, the course focuses on the major European encounters with native societies, beginning with the expedition of 1492 and extending into the Twentieth Century. The disparate responses and resistance strategies of various indigenous populations confronting the ideological and physical intrusion of Europeans is studied.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior: Use critical thinking skills to understand the effects of historical examples of inequality around race, class, and gender and its' impact on the Native American community and within the context of the greater contemporary society.
2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live: Develop a deeper

understanding of one's own culture as well as learning about the cultures of others.

3. Understand the role of individuals and institutions within the context of society: This ethnic studies course uses multiple methods, and techniques to allow students to constantly find themselves and their stories within the context of the society in which we are exploring. By inserting themselves into the narrative, they can greater understand and critically analyze the relationship between the individual and societal institutions.

4. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry: Ethnic Studies is an interdisciplinary and multidisciplinary field of study. This Ethnic Studies course borrows from multiple fields, using a wide range of theoretical foundations and methods of inquiry, on which to build the student's understanding of the material covered in this course.

5. Utilize appropriate information literacy skills in written and oral communication: The webpage of Ethnic Studies appears on all course syllabi. Students are encouraged to use the webpage as a foundation to explore the complexities of the discipline. Students are also assigned class exercises that require them to explore web-based materials. Lastly, students are offered extra credit for exploring all forms of media resources for material related to this course.

6. Understand the diversity of human experience and thought, individually and collectively: This Ethnic Studies course engages in the critical analysis of why people (all people of all sub-groups within society) act the way that they do, both as individuals and within the context of social groups and institutions. Within the focus of this particular course: the Native American population.

7. Apply knowledge and skills to contemporary problems and issues: Although the primary focus of this course is within a historical context, the course still engages in a free flowing comparison between historical and contemporary society. Context in understanding contemporary social phenomenon does not exist without a historical analysis.

ES 243 - Native American Studies: Contemporary Indigenous Issues

4 Credit(s)

This course examines the ongoing impact of colonialism on indigenous peoples in the U.S. Identity, citizenship, sovereignty, treaty rights, land/resource ownership and use, political activism, education, and economic issues are explored. This course also looks at alliance-building between indigenous peoples and other groups here and abroad.

Learning Outcomes

Upon completion of this course the student will:

1. Be able to look at, and understand, current social phenomenon, using the framework of historical and social context.
2. Be able to differentiate between personal opinion and the science-based information found in the cannon of ethnic studies.
3. Know how their cultural values, personal values, and beliefs shape their worldview.
4. Know how to apply the concepts, themes, theories, presented in the class, to their lives as active citizens.

ES 244 - Native American Leadership 1: Building Leadership Through Indigenous Oratory

4 Credit(s)

The course will examine the historical and contemporary methods by which Indigenous leadership is shaped from birth to adulthood through the use of oratory. Students will explore the broad concept of folklore and the methodology behind the strategic application within Indigenous communities.

Learning Outcomes

Upon successful completion of this course, students will be able to;

1. Understand non-linear approaches to knowledge.
2. Challenge and critique hegemonic knowledge.
3. Understand indigenous epistemology and ontology.
4. Build leadership skills and self-efficacy.

Fabrication and Welding

WLD 111 - Blueprint Reading for Welders

3 Credit(s)

This course provides instruction necessary to interpret blueprints that are typically used by metal fabrication shops. Emphasis is placed on understanding types of lines, dimensioning, views, notations, abbreviations, welding symbols and steel nomenclature.

Prerequisite: RD 087 and EL 115 OR prior college OR placement test.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Identify basic lines and views
2. Describe the purpose and processes of dimensioning
3. Identify and explain notes, specifications and abbreviations
4. Recognize and describe various metal structural shapes
5. Recognize and explain detail and assembly prints
6. Interpret typical welding symbols

WLD 112 - Fabrication/Welding 1

12 Credit(s)

Comprehensive skills necessary for the fabrication of metal products. This course introduces basic blueprint reading and shop fabrication techniques, shielded metal arc, GMAW, and gas tungsten arc welding processes. These skills are learned in the context of assigned and graded practice projects and written tests.

Prerequisite: RD 087 and EL 115 OR prior college OR placement test.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Interpret blueprints that are typically used by metal fabrication shops and apply knowledge of the types of lines, dimensioning, views, notations, abbreviations, welding symbols and steel nomenclature
2. Demonstrate skills in Shielded Metal Arc Welding (SMAW), oxy-acetylene cutting, and the practice of safe welding-shop work methods while welding in all positions (flat, horizontal, overhead, and vertical)
3. Use gas shielded and cored wire technology in the application of wire drive process, prepare weld test specimens, and perform weld tests
4. Practice proper care, setup, and use in the gas tungsten arc welding (GTAW) of carbon and stainless steel sheet material, including the testing of weld samples
5. Apply knowledge of forming, fitting, and welding processes to demonstrate entry-level fabrication techniques using proper layout and geometry

WLD 113 - Fabrication/Welding 2

12 Credit(s)

Comprehensive skills necessary for the fabrication of metal products. This course builds and advances skills previously learned. Instruction and practice in blueprint reading, shop fabrication techniques, shielded metal arc, FCAW-G, and gas tungsten arc welding is provided. Safe lift truck operation training is also provided in this course.

Prerequisite: WLD 112 or WLD 111 and WLD 121 and WLD 143 and WLD 242 or instructor consent.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Interpret blueprints that are typically used by metal fabrication shops and apply knowledge of the types of lines, dimensioning, views, notations, abbreviations, welding symbols and steel nomenclature
2. Demonstrate skills in Shielded Metal Arc Welding (SMAW), oxy-acetylene cutting, and the practice of safe welding-shop work methods while welding in all positions (flat, horizontal, overhead, and vertical)
3. Use gas shielded and cored wire technology in the application of wire drive process, prepare weld test specimens, and perform weld tests
4. Practice proper care, setup, and use in the gas tungsten arc welding (GTAW) of carbon and stainless steel sheet material, including the testing of weld samples
5. Apply knowledge of forming, fitting, and welding processes to demonstrate entry-level fabrication techniques using proper layout and geometry

WLD 114 - Fabrication/Welding 3

12 Credit(s)

Comprehensive skills necessary for the fabrication of metal products. This course builds and advances skills previously learned. Instruction and practice is given in calculating material costs, shop fabrication techniques, FCAW-S, gas tungsten arc welding, and SMAW. Safe overhead crane operation is also provided in this course.

Prerequisite: WLD 112 and WLD 113 or WLD 111 and WLD 121 and WLD 122 and WLD 143 and WLD 154 and WLD 242 and WLD 256 or instructor consent.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Interpret blueprints that are typically used by metal fabrication shops and apply knowledge of the types of lines, dimensioning, views, notations, abbreviations, welding symbols and steel nomenclature

2. Demonstrate skills in Shielded Metal Arc Welding (SMAW), oxy-acetylene cutting, and the practice of safe welding-shop work methods while welding in all positions (flat, horizontal, overhead, and vertical)
3. Use gas shielded and cored wire technology in the application of wire drive process, prepare weld test specimens, and perform weld tests
4. Practice proper care, setup, and use in the gas tungsten arc welding (GTAW) of carbon and stainless steel sheet material, including the testing of weld samples
5. Apply knowledge of forming, fitting, and welding processes to demonstrate entry-level fabrication techniques using proper layout and geometry

WLD 121 - Shielded Metal Arc Welding 1 (stick welding)

1-4 Credit(s)

Skill development in SMAW, oxy-acetylene cutting, understanding and practicing safe work methods in the welding shop and welding in all positions (flat, horizontal, overhead, and vertical), using the shielded metal arc process.

Learning Outcomes

Upon completion of this course, the student will be able to:

1. Perform welding in a manner that demonstrates concern for safety and welfare for self, others and property
2. Cut steel to project dimensions using manual oxyacetylene cutting torch
3. Metallic arc weld in the four standard positions: (flat, horizontal, overhead, and vertical) on all assigned projects

WLD 122 - Shielded Metal Arc Welding 2 (stick welding)

1-4 Credit(s)

Training in the selection of electrodes and their use on metals of varying thicknesses, and continued training in oxyacetylene cutting. Welding using a wide variety of electrodes. The student will be instructed in safe work habits and the optimum use of materials and equipment.

Prerequisite: WLD 121 or performance test and written examination.

Learning Outcomes

Upon completion of this course, the student will be able to:

1. Comprehend welding safety requirements and perform in a manner that demonstrates concern for safety and welfare for self, others and property. Weld using AC and DC current
2. Cut materials to size with the use of manual and semi-automatic oxyacetylene cutting equipment
3. Arc weld adequately in the completion of assigned projects in the four standard positions: (flat, horizontal, overhead, and vertical)

WLD 139 - Welding Lab

1-3 Credit(s)

Only available to students who have taken or are registered in the arc welding, wire drive processes, and/or fabrication/welding sequence. This is an opportunity for additional time in the welding lab.

Prerequisite: Instructor consent and minimum reading score of 68 OR RD 087 and EL 115 OR prior college OR placement test.

Learning Outcomes

Upon completion of this course the successful student will be able to:

1. Gain additional proficiency in SMAW, GMAW, FCAW and/or GTAW.

WLD 140 - Welder Qualification (Cert): Wire Drive Processes

3 Credit(s)

This course studies the purpose and standards of the American Welding Society and American Society of Mechanical Engineers procedure and welder qualification tests. It also provides instruction and practice in the preparation, welding and finishing of test specimens to code standards using wire drive processes.

Prerequisite: WLD 143 or WLD 154 or WLD 112 and (WLD 113 or WLD 114) or instructor consent.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Explain the purpose, legal implications and functions of pre-qualified and welder qualification code tests
2. Explain the code test variables found on Procedure Qualification Data Sheets
3. Explain the extent and limitations of the applicability of a particular code test
4. Explain the difference between a procedure and pre-qualified code test
5. Correctly prepare and assemble materials to be welded to code test standards
6. Weld plate or pipe to AWS or ASME code standards using wire drive processes
7. Pass an AWS or ASME Welder Qualification Test using a wire drive welding process
8. Prepare to AWS or ASME standards welded-to-code coupons for guided bend testing

WLD 141 - Welder Qualification (Cert): SMAW

3 Credit(s)

This course studies the purpose and standards of American Welding Society welder qualification tests. It also provides instruction and practice in the preparation, welding and finishing of test specimens to code standards using shielded metal arc welding processes. Course includes AWS D1.1 Welder Qualification Test.

Prerequisite: WLD 122 or WLD 112 and (WLD 113 or WLD 114) or instructor consent.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Explain the purpose, legal implications and functions of pre-qualified and welder qualification code tests
2. Explain the code test variables found on Procedure Qualification Data Sheets
3. Explain the extent and limitations of the applicability of a particular code test
4. Explain the difference between a procedure and pre-qualified code test
5. Correctly prepare and assemble materials to be welded to code test standards
6. Weld plate or pipe to AWS or ASME code standards using the SMAW process
7. Pass an AWS or ASME Welder Qualification Test using the SMAW process
8. Prepare to AWS or ASME standards welded-to-code coupons for guided bend testing

WLD 142 - Pipe Welding Lab: Carbon Steel

3 Credit(s)

This is a hands-on course that instructs in set-up procedures and welding techniques required to weld carbon steel pipe in various positions. The code taught will be that of the American Welding Society (AWS). The scope of the course is limited to the practicing of pipe welding techniques. At additional cost, a student may take an AWS pipe welder qualification code test to be arranged with the instructor.

Prerequisite: WLD 114 or WLD 122

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Be able to prepare pipe coupons for welding according to AWS standards
2. Be able to weld pipe coupons according to AWS standards
3. Be able to prepare pipe coupons for testing according AWS standards
4. Test and have pass pipe coupons according to AWS standards

WLD 143 - Wire Drive Welding 1

1-4 Credit(s)

Skills development in gas metal arc welding (GMAW) of carbon steel. Students will be instructed in proper care, set-up and use of GMAW equipment. Preparing weld test specimens and performing weld tests is included in this course.

Learning Outcomes

Upon completion of this course, the successful student will be able to:

1. Set GMAW machine controls to effect short arc, spray arc and pulsed arc metal transfer while using solid wire of various sizes.
2. Select and properly connect to a GMAW power source appropriate shielding gases necessary to short arc and spray arc metal transfer.
3. Prepare typical industrial weld joints, make welds on these joints in the four standard positions, and perform destructive and non-destructive tests on those weldments. Prepare materials, outline testing procedures, make welds, prepare test specimens, and execute testing procedures consistent with certain pre-qualified American Welding Society code tests.
4. Identify the type, cause, and solution to weld defects typically associated with GMAW short arc, spray arc and pulsed arc metal transfer.
5. Perform minor maintenance on GMAW equipment associated with contact tip, liner and drive rolls.

WLD 151 - Fundamentals of Metallurgy

1-3 Credit(s)

Physical, chemical and mechanical nature of carbon and alloy steels. Includes study of the purpose and practice of various thermal treatments and cold working processes common to metal using industries.

Prerequisite: RD 087 and EL 115 OR prior college OR placement test.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Identify various types of the more common commercial metals by two or more methods.
2. Describe the basic atomic and crystalline structure of metals.
3. Describe at least five mechanical, physical, and chemical properties of metals.

4. Describe the effects of alloying elements.

5. Perform the heat-treating processes of annealing, normalizing, quench hardening, tempering, stress relieving and other metal working processes.

6. Explain the effects of expansion and contraction during temperature changes in structural shapes, fabricated frames and machinery.

7. Determine the weld ability of various metals and describe an appropriate welding procedure and process for those metals.

8. Demonstrate or describe processes and applicability of preheating and post heating for various metals.

9. Describe fluxes, slags, and shielding gases and their effects on weldments.

WLD 154 - Wire Drive Welding 2

1-4 Credit(s)

Technology and application of wire drive process using gas shielded cored wire is taught.

Prerequisite: WLD 143 or instructor consent.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Explain the performance differences between cored and solid wire electrodes.
2. Make power source adjustments necessary to the effective operation of large and small diameter ferrous gas shielded and self-shielded flux-cored welding processes.
3. Identify the type, cause and solution to weld defects typically associated with cored wire drive processes.
4. Prepare materials, outline testing procedures, make welds, prepare specimens, and conduct tests in accordance with standards established by American Welding Society.
5. Demonstrate proficiency to industrial levels when using ferrous flux-cored gas shielded and self-shielded wire processes to weld plate and other structural materials.

WLD 159 - Wire Drive Welding 3

1-4 Credit(s)

Wire Drive Welding 3 provides training in the technology and application of wire drive processes using carbon steel solid wires in GMAW-S, GMAW-P, and SAW formats. Instruction is also given in the use of GMAW short circuiting and spray transfer of stainless steel and spray transfer of aluminum and silicon bronze wires.

Prerequisite: WLD 143 or instructor consent.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Explain and demonstrate the effects of various industrial shielding gases on performance parameters of ferrous and non-ferrous solid electrodes.
2. Make power source adjustments necessary to the effective operation of submerged arc welding (SAW), and gas metal arc welding of ferrous and non-ferrous wires in short arc, spray and pulsed spray transfer modes (GMAW-S and GMAW-P).
3. Identify the type, cause and solution to weld defects typically associated with wire drive processes.
4. Prepare materials, outline testing procedures, make welds, prepare test specimens, and execute testing consistent with standards established by American Welding Society.
5. Demonstrate proficiency when welding with SAW, ferrous and non-ferrous GMAW, GMAW-S and GMAW-P to a level equal to, or better than, welders who are industrially experienced in these processes.

WLD 160 - Wire Drive Welding 4

1-4 Credit(s)

This course provides technical information about, and practice in, Gas Metal Arc Welding (GMAW) and Flux Cored Arc Welding (FCAW) that builds on knowledge and skills learned in Wire Drive Welding 1, 2 & 3. Instruction in material preparation and testing of weld samples will also be provided.

Prerequisite: WLD 143 and WLD 154.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Fit and tack typical industrial weld joints.
2. Use the GMAW process with various shielding gases and metal transfer modes to weld typical industrial joints to entry-level standards.
3. Use the FCAW-G process and various shielded gases and metal transfer modes to weld typical industrial joints to entry-level standards.
4. Test weld coupons using various equipment.

5. Demonstrate, in written form, knowledge of the technology associated with GMAW and FCAW-G welding.

WLD 215 - Fabrication/Welding 4

12 Credit(s)

Understanding of materials used in, and skills necessary for, the fabrication of metal products. Instruction and practice in fabrication techniques, GTAW, SMAW, and wire drive processes. Concepts in material science that pertain to fabrication and welding will be presented and tested in a laboratory environment. These skills and concepts may be learned producing actual metal products, some of which may be marketed. This course develops skills taught in Fabrication/Welding 1, 2 and 3. Under certain circumstances, the class may be taken as an introductory course.

Prerequisite: WLD 112 and WLD 113 and WLD 114. Second year standing or instructor consent or performance test and written examination.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Make shop drawings
2. Read and apply industrial blueprints

Shop Fabrication:

3. Identify symbols and shapes of structural steels
4. Read and apply industrial blueprints
5. Use pitch lines, beam boards, web wages, and miter techniques to layout structural steel
6. Cope, fit, and weld various structural steel shapes
7. Fabricate and weld metal products
8. Demonstrate safe and effective use of shop tools

Metallurgy:

9. Identify various types of the more common commercial metals by two or more methods
10. Describe physical, mechanical and chemical properties of carbon and alloy
11. Describe the purpose, write procedures and perform heat treating processes commonly used with carbon and alloy steels
12. Explain the dynamics and implement procedures for the control of thermally induced expansion/contraction stresses in steel
13. Use non-destructive and destructive testing procedures to evaluate base metal properties

Welding: Shielded Metal Arc Welding:

14. Weld SMAW projects and products.

Gas Metal Arc Welding:

15. Weld GMAW projects and products

Gas Tungsten Arc Welding:

16. Set GTAW machine controls to weld steel alloys
17. Layout, cut, tack typical industrial weld joints, and makes welds on these joints
18. Make industrially acceptable welds on various structural materials
19. Perform non-destructive and destructive weld tests on steel weldments
20. Critique welds identifying causes of, and solutions to, various weld defects

WLD 216 - Fabrication/Welding 5

12 Credit(s)

Understanding materials used in, and skills necessary for, the fabrication of metal products. Instruction and practice in fabrication techniques and the programming of shape cutting and press break, including concepts in the material science and the gas tungsten arc welding of stainless steels and aluminum alloys. Metallurgical considerations in the welding of carbon and HSLA steels is also studied. This course develops those skills taught in Fabrication/Welding 1, 2, 3, and 4. Under certain circumstances, the class may be taken as an introductory course.

Prerequisite: WLD 215. Second year standing or instructor consent or performance test and written examination.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Make shop drawings
2. Read and apply industrial blueprints

Shop Fabrication:

3. Identify by schedule number various pipes
4. Layout, cut, fit, and weld various pipe joints
5. Layout, cut, fit, and weld pipe flanges
6. Fabricate from blueprints and shop drawings metal products

Programmable Metal Processing Equipment:

7. Set-up, program and operate computer controlled metal processing equipment

8. Edit computer programs to alter cutting and bending parameters on programmable equipment

9. Perform basic maintenance on computer controlled metal processing equipment

Applied Metallurgy:

10. For plain carbon and HSLA steels determine weldability and write appropriate welding procedures
11. Research and demonstrate appropriate pre-weld and post-weld heating procedures for plain carbon and HSLA steels
12. Describe effects of various welding shielding gases, fluxes and slags on weldments
13. Use non-destructive and destructive testing procedures to evaluate weld and base metal properties
14. Identify various stainless steel and aluminum alloy groups using visual methods and metal analysis tools
15. Describe in writing the effects of alloying elements on the physical, mechanical and chemical properties of stainless steels and aluminum alloys
16. Use tables to develop and perform various heat treating procedures for stainless and /or aluminum alloys
17. Determine, using tables, the weldability of various stainless steel and aluminum alloys, and describe and perform an appropriate welding procedure for those metals

Welding: Shielded Metal Arc Welding:

18. Weld SMAW projects and products

Gas Metal Arc Welding:

19. Weld GMAW projects and products. Flux Cored Arc Welding, Gas Shielded
20. Weld FCAW-G projects and products

Gas Tungsten Arc Welding:

21. Set GTAW machine controls to weld stainless steel and aluminum alloys
22. Layout, cut and tack typical industrial weld joints and make welds on these joints in the four standard positions
23. Weld aluminum using manual and programmed pulsing techniques
24. Perform non-destructive and destructive weld tests on stainless steel and aluminum alloy weldments
25. Critique welds identifying causes of, and solutions to, various defects

WLD 217 - Fabrication/Welding 6

12 Credit(s)

Instruction in the business practices associated with, and fabrication of, metal products. SMAW, FCAW, GTAW welding processes are practiced on standard and more advanced applications. In addition, analysis of wear environments and the selection and application of special wear or corrosion resisting surface treatments are studied and practiced.

Prerequisite: WLD 216. Second year standing or instructor consent or performance test and written examination.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Make shop drawings
2. Read and apply industrial prints
3. Evaluate for cost from industrial prints

Shop Fabrication:

4. Fabricate from blueprints and shop drawings various metal products. Introduction to Business Practices
5. Identify component parts of a successful metal fabrication business
6. Correctly describe the sequencing of production and the interrelationship of production, business administration and marketing functions
7. Estimate costs to build various metal products

Wear Environments and Surface Applications:

8. Identify common wear environments including appearance and associated dynamics
9. Select from industrial catalogues electrodes and other materials appropriate to metals in specified wear environments
10. Demonstrate various techniques for the application of hard facing and corrosion resisting materials

Welding:

11. Weld various Shielded Metal Arc electrodes on projects and products
12. Weld various wire drive electrodes on projects and products
13. Gas Tungsten Arc Weld various projects and products

WLD 242 - Gas Tungsten Arc Welding 1

3 Credit(s)

This course teaches the technology of, and provides practice in, gas tungsten arc welding (GTAW) of carbon and stainless steel sheet material. Students will be instructed in proper care, set-up and use of GTAW equipment. Testing of weld samples is included in this course.

Learning Outcomes

Upon completion of this course, the successful student will be able to:

1. Set GMAW machine controls to weld all steel alloys of various thicknesses.
2. Layout, cut and tack typical industrial weld joints and make welds on these joints in the four standard positions.
3. Make industrial acceptable welds on various structural materials including sheet, plate, tubing and pipe products.
4. Perform non-destructive and destructive weld tests on steel weldments.
5. Critique welds identifying causes of, and solutions to, various defects.

WLD 256 - Gas Tungsten Arc Welding 2

3 Credit(s)

This course provides continuing training in the technology and practice of the gas tungsten arc welding (GTAW) of carbon and stainless steel sheet. Testing of weld samples is included in this course.

Prerequisite: **Prerequisite:** RD 087 and EL 115R OR prior college or placement test through the Testing Office.

Learning Outcomes

Upon completion of this course, the successful student will be able to:

1. Set GMAW machine controls to weld carbon and stainless steel alloys of various thicknesses using both argon and helium shielding gases
2. Layout, cut and tack typical industrial weld joints and make welds on these joints in the four standard positions
3. Weld carbon steel and stainless steel with machine controlled pulsing arc. Make welds on carbon steel and stainless steel materials
4. Perform non-destructive and destructive weld tests on carbon and stainless steel alloy weldments
5. Critique welds identifying causes of, and solutions to, various defects

WLD 257 - Gas Tungsten Arc Welding 3

3 Credit(s)

This course provides technical information about, and practice in, gas tungsten arc welding of aluminum alloy sheet materials. Instruction in material preparation, finishing and testing of coupons will also be provided.

Prerequisite: WLD 256

Learning Outcomes

Upon completion of this course, the successful student will be able to:

1. Set GMAW machine controls to weld aluminum alloys of various thicknesses using both argon and helium shielding gases
2. Layout, cut and tack typical industrial weld joints and make welds on these joints in the four standard positions
3. Weld aluminum with machine controlled pulsing arc. Make welds on aluminum sheet and tubing materials
4. Perform non-destructive and destructive weld tests on aluminum alloy weldments
5. Critique welds identifying causes of, and solutions to, various defects

Film Arts

FA 221 - Computer Animation

4 Credit(s)

This course serves as an introduction to the technical and conceptual methods for the creation and animation of digital 3D objects. This is a projected oriented, hands-on course, which gives students an opportunity to design and produce 3D computer animation projects, as well as to watch and discuss animation. The course will emphasize principles of animation and introduce 3D modeling and animation tools techniques.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Define and apply the general principles and demonstrate an understanding of the technical aspects of 3D modeling and animation
2. Demonstrate the proper use and application of 3D software tools
3. Design, produce and output a 3D animation incorporating the general principles and techniques of modeling, texturing and lighting

FA 222 - Computer Animation 2

4 Credit(s)

A comprehensive exploration of 3D computer animation arts: 3D space and form, model creation, texturing, lighting, scene composition, animation and rendering strategies.

Prerequisite: FA 221

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Define and apply the general principles and demonstrate an understanding of the technical aspects of 3D object modeling, texturing and lighting
2. Define and apply the general principles and demonstrate an understanding of the technical aspects of scene composition and animation
3. Define and apply the general principles and demonstrate an understanding of the technical aspects of render types and rendering strategies
4. Create, render and animate a 3D character walk-cycle sequence

FA 250 - Concepts of Visual Literacy

3 Credit(s)

Introduction to elementary concepts of visual literacy, including theories of representation and design. Includes the role of composition, color, time, motion, lighting, and sound in the design of moving images for film, television, and computer imaging. Students learn to incorporate these design elements into visual projects and learn how to critically evaluate visually mediated messages.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Distinguish between the form and content of visually mediated messages
2. Discuss theories of representation in relationship to the design and evaluation of visually mediated messages
3. Define elements of two-dimensional composition and discuss their relevance to the design of visually mediated messages
4. Describe the manipulation of time through editing and discuss its relevance to the design of visually mediated messages
5. Define types of motion and discuss their relevance to the design of visually mediated messages
6. Discuss elements of lighting and their relevance to the design of visually mediated messages
7. Define types of sound and discuss their relevance to the design of visually mediated messages

FA 254 - Fundamentals of Lighting

3 Credit(s)

Exploration of a comprehensive mix of lighting techniques, tools and theory that can be applied to media production including video, photography, and production design. Students learn the fundamental properties of light, as well as practical advice, tips, and tricks for improving production values from the studio or location to the screen. Students gain an understanding of image manipulation through demonstrations, practical hands-on exercises, and design assignments.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Identify the basic safety requirements that need to be followed when working with lighting fixtures and electricity in a test situation with 80% accuracy
2. Identify, through testing with 75% accuracy, the various types of lighting, lighting fixtures, and control devices and their uses as applied to the areas of photography, film and video
3. Explain the differences of latitude and application of lighting ratios to photography, film and video in a test situation with 75% accuracy
4. Produce a multiple light set-up utilizing studio lighting grid in accordance with industry standards
5. Produce a series of three different multiple light set-ups maintaining the same lighting ratio utilizing a studio lighting grid in accordance with industry standards
6. Produce a series of three different multiple light set-ups maintaining the same lighting ratio in a location setting according to instructors standards
7. Produce a balanced (color) lighting set-up when using mixed (color temperature) lighting sources on location according to instructor's standards
8. Produce a series of three lighting set-ups utilizing practical's (available light sources) or enhanced practicals on location in the evening according to instructor's standards

FA 255 - Understanding Movies: American Cinema

3 Credit(s)

An introductory film studies course designed to bring Hollywood film making into clear focus as an art form, economic force, and a system of representation and communication. It explores how Hollywood films work technically, artistically, and culturally. Students probe the deeper meaning of American movies, the hidden messages of genres, the social and psychological effects of Hollywood film styles, and the mutual influence of society and popular culture through encounters with the work of directors such as John Ford, Howard Hawks, and Martin Scorsese.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Discuss the major events shaping American film history from the silent era through the present day
2. Utilize the basic technical and critical vocabulary of motion pictures
3. Discuss how the technology of cinema relates to film art
4. Describe the economic structure of the film industry
5. Evaluate their own role as passive spectators, thereby increasing their ability to watch films actively and critically
6. Enhance their ability to think, speak and write critically about the role of film in an increasingly visual and technological culture

FA 256 - Lighting for Photography

3 Credit(s)

An introduction to the basics in lighting for photography. Students learn how to work within a studio environment and on location. All students work with professional lighting equipment and learn the basics in setting up, metering, and shooting portraits and basic commercial products. Students also learn the basics in camera and lens variations, film stock, digital output, and editing. Contents and expected learning proficiencies of this course vary from term to term. May be repeated up to 12 total credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Work in studio environment and on location
2. Be able to work with equipment, basic set-ups, metering and shooting portraits and basic commercial products
3. Have a basic understanding of camera and lens variations
4. Understand film stock and traditional cameras
5. Understand digital output and editing
6. The elements needed to produce professional quality portfolio appropriate for presentation

FA 261 - Writing and Interactive Design

3 Credit(s)

An introduction to basic principles in scripting for interactive media. Focuses on writing techniques which foster interactivity, and explores the role of authoring tools in the design of multimedia projects. It defines the stages involved in the development of multimedia projects and addresses the skills necessary to write a proposal, develop a flow chart, and storyboard plans for a multimedia project involving elements such as text, graphics, illustrations, animation, video, sound, hyperlinks, and search mechanisms.

Prerequisite: WR 121 or WR 121_H and ART 216

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Discuss the applications of multimedia to education, training, communication, marketing, art, performance, and entertainment
2. Define the role of the writer in the multimedia project team
3. Compare and contrast traditional media scripting methods with scripts which foster interactivity
4. Discuss the role of authoring tools in the design of multimedia projects
5. Define the stages involved in the development process for multimedia projects
6. Write a proposal for a multimedia project which defines the projects objectives, target audience, content and demonstrates the interface design
7. Storyboard a short multimedia project revealing its use of screen layouts, text, graphics, illustrations, animation, video, sound, links, and search mechanisms
8. Produce a short multimedia project based on the student's proposal, flow chart, and storyboard

FA 264 - Women Make Movies

4 Credit(s)

This course focuses on women directors and their contributions to cinema. Students will be introduced to the historical, cultural, and economic context of film production, as well as to formalist film vocabulary. They will explore readings in feminist scholarship and analyze woman-authored cinema in the context of race, ethnicity, gender, sexuality, and class. Texts span the silent period to the present. **Prerequisite:** Suggested placement into WR 115 (college-level reading and writing skills)

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Explain women's contributions to cinema
2. Describe the ideological implications of films in terms of race, gender, ethnicity, sexuality, ability, nation, and class
3. Recognize and describe the multiplicity & diversity of women filmmakers' choices in terms of narrative content and cinematic style
4. Use a social, aesthetic, technological, or economic lens to analyze film(s)
5. Contextualize films within their socio - political and economic histories, paying particular attention to the constraints that preclude the participation of women directors specially women of color
6. Apply an understanding of film language in the analysis of women s cinema
7. Write meaningfully about the formal and ideological issues of the films studied during the quarter

FA 270C - Film Genres: Comedy

4 Credit(s)

Film Genre Topics is a course focused on the theoretical, historic, and aesthetic investigation of a chosen genre (including but not limited to film noir, film comedy, and horror film). Students will be introduced to debates within genre theory, various theories of a given genre, as well as representative cinematic texts. The course will focus on analyzing, historicizing, and exploring a chosen genre and its cycles.

Prerequisite: Recommended: placement into WR 115 or above (college-level reading and writing skills)

Learning Outcomes

Upon completing this course the student should be able to:

1. Understand and apply one or more of the theories of genre studied during the term
2. Explain the larger socio-historical and generic con text from which the chosen films emerge and which helps to shape them
3. Explain the ideological implications of the genre and representative texts in terms of race, gender, ethnicity, sexuality, ability, and class
4. Apply a framework and formal cinematic vocabulary for thinking and talking about the genre
5. Recognize and be able to describe narrative and stylistic conventions of representative texts
6. Identify, evaluate, and analyze significant examples of the genre studied
7. Write meaningfully about the formal, generic, and ideological issues of the films studied during the quarter

FA 270H - Film Genres: Horror

4 Credit(s)

Film Genre Topics is a course focused on the theoretical, historic, and aesthetic investigation of a chosen genre (including but not limited to film noir, film comedy, and horror film). Students will be introduced to debates within genre theory, various theories of a given genre, as well as representative cinematic texts. The course will focus on analyzing, historicizing, and exploring a chosen genre and its cycles.

Prerequisite: Recommended: placement into WR 115 or above (college-level reading and writing skills)

Learning Outcomes

Upon completing this course the student should be able to:

1. Understand and apply one or more of the theories of genre studied during the term
2. Explain the larger socio- historical and generic con text from which the chosen films emerge and which helps to shape them
3. Explain the ideological implications of the genre and representative texts in terms of race, gender, ethnicity, sexuality, ability, and class
4. Apply a framework and formal cinematic vocabulary for thinking and talking about the genre

5. Recognize and be able to describe narrative and stylistic conventions of representative texts
6. Identify, evaluate, and analyze significant examples of the genre studied
7. Write meaningfully about the formal, generic, and ideological issues of the films studied during the quarter

FA 270N - Film Genres: Noir

4 Credit(s)

Film Genre Topics is a course focused on the theoretical, historic, and aesthetic investigation of a chosen genre (including but not limited to film noir, film comedy, and horror film). Students will be introduced to debates within genre theory, various theories of a given genre, as well as representative cinematic texts. The course will focus on analyzing, historicizing, and exploring a chosen genre and its cycles.

Prerequisite: Recommended: placement into WR 115 or above (college-level reading and writing skills)

Learning Outcomes

Upon completing this course the student should be able to:

1. Understand and apply one or more of the theories of genre studied during the term
 2. Explain the larger socio- historical and generic context from which the chosen films emerge and which helps to shape them
 3. Explain the ideological implications of the genre and representative texts in terms of race, gender, ethnicity, sexuality, ability, and class
 4. Apply a framework and formal cinematic vocabulary for thinking and talking about the genre
 5. Recognize and be able to describe narrative and stylistic conventions of representative texts
 6. Identify, evaluate, and analyze significant examples of the genre studied
 7. Write meaningfully about the formal, generic, and ideological issues of the films studied during the quarter
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FA 276 - Gender, Race, and Class in U.S. Cinema

4 Credit(s)

This cinema course is focused on the exploration of representations of gender, race, and class in U.S. Cinema. The course explores the impact of Classical Hollywood Style—the predominate form of storytelling in U.S. Cinema during much of the 20th Century—as it relates to both the creation of cinematic texts and the presentation of race/ethnicity, gender, sexuality, and class. Students will be introduced to a cinematic language, the history of cinematic representation, and theoretical discussions of meaning-making, reception, production, and distribution of cinematic texts. Culminating projects will involve the application of cinematic theory in an analysis of the construction of race, gender, sexuality, and class in particular cinematic texts. Weekly campus screenings are required, and clips of films are used in class for close analysis and are an integral part of the course.

Prerequisite: Recommended: placement into WR 115 (college-level reading and writing skills)

Learning Outcomes

Upon completion of the course the student will:

1. Explain the impact of Classical Hollywood Style on the cinematic traditions in the U.S.
2. Apply a cinematic language in the analysis of cinematic texts
3. Recognize and discuss major trends within and between the filmmaking strategies and traditions of underrepresented groups (e.g., women directors, Black, Latino, Asian-American, and/or Native American filmmakers)
4. Use a theoretical lens in order to analyze representation of gender, race, class, and sexuality in U.S. cinema
5. Be able to discuss the economic, industrial and aesthetic systems that have privileged dominant modes of storytelling

Fitness and Lifestyle Specialist

FLS 110 - Coaching Healthy Eating

2 Credit(s)

Students will learn how to provide scientifically supported, practical and relevant nutrition and weight management advice to their clients while staying within their scope of practice. They will learn the skills to navigate a landscape of quick-fix solutions, poor food choices, and a multi-billion dollar diet industry while providing their knowledge of nutrition and weight management into actionable lifestyle change for clients and patients.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Differentiate and apply the scope of practice for fitness professionals when giving advice about nutrition and identify when to refer to a dietitian
 2. Analyze and evaluate nutrition information to determine validity and practicality
 3. Interpret how cultures and traditions affect food choices to assist clients in selecting healthier diets
 4. Utilize effective and motivational communication when providing nutrition, wellbeing, and weight loss, gain or management guidance with clients
 5. Demonstrate how to educate a diverse range of clients on methods and techniques of optimum nutrition
 6. Determine how to optimize clients' needs, wants, goals and decisions with safe and effective nutrition recommendations
 7. Identify strategies for food access, procurement, preparation, and safety for clients
-

FLS 120 - Fitness Assessment & Exercise Prescription - Field Techniques

3 Credit(s)

This course introduces students to exercise prescription principles and exercise program design. Students learn to prescribe exercise for healthy populations or populations with medically controlled disease. Exercise type, volume, progression, client motivation, goals, safety, and enjoyment are emphasized.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Recognize the basic components of fitness, common field assessments, and the relationship between physical activity and health
 2. Demonstrate the skills and knowledge necessary to assess basic fitness components
 3. Understand the current trends, growth, and technology of fitness-related career fields
 4. Demonstrate the ability to develop exercise prescriptions for both general and special populations
 5. Research, recognize, and analyze current fitness-industry practices, trends and current topics of importance to the industry
-

FLS 130 - Principles of Strength Training and Conditioning Instruction

2 Credit(s)

This course introduces students to fundamental principles and techniques of resistance training, and programs/systems of conditioning. Includes development of exercises for flexibility, balance, strength, and aerobic conditioning. Provides students with foundational skills for fitness-based careers.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply principles and concepts of aerobic and anaerobic exercise training in developing exercise programs for a variety of clients
 2. Apply principles and concepts of strength and conditioning exercise, using a variety of exercise modalities, in developing exercise programs for a variety of clients
 3. Identify and then apply a variety of different exercise programming options
 4. Demonstrate the components of a proper warm-up, cool down and flexibility program
 5. Able to analyze exercise technique and choose exercises which are effective and safe
 6. To develop the ability to analyze exercise equipment and machines for their safety and efficiency
 7. Demonstrate the knowledge, skills and abilities needed to develop and instruct individual and group exercise sessions
 8. Design appropriate, safe, and effective exercise programs in a variety of settings for a variety of clientele
-

FLS 140 - Applied Exercise Physiology 1

3 Credit(s)

This course introduces FLS Program students to the neuromuscular, cardiovascular and respiratory responses to acute exercise, and long-term physical training. Exercise metabolism, physiological fuel systems and hormonal control will also be discussed.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Describe basic functioning of physiological systems including: circulatory, respiratory, nervous, skeletal and muscular
2. Explain how these physiological systems respond and adapt to acute exercise and long term physical training

3. Differentiate between aerobic and anaerobic metabolic processes and different fuel sources for energy
4. Apply the above concepts to physical activity

FLS 150 - Techniques of Group Exercise Leadership

2 Credit(s)

Students are introduced to group exercise leadership methods including safety, motivation, communication, organization and class/activity planning. Students experience leading/teaching in a variety of group fitness activities/genres for a variety of skill levels.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Gain experience and develop necessary group exercise leadership skills to teach a variety of group ex. classes
2. Analyze and develop skills, traits, and behaviors of leadership and professionalism
3. Develop and utilize successful lesson plans for group organization and activity
4. Apply effective safety, formations, skill progression, error analysis, and communication skills in actual leadership situations
5. Develop useful teaching and resource materials for effective leadership
6. Utilize 32-count phrasing and choreography techniques as related to group exercise instruction

FLS 160 - Applied Anatomy and Kinesiology

3 Credit(s)

Introduces students to basic anatomy and kinesiology principles of movement and exercise. Topics include identification and movement of major muscle groups and joints, skeletal structure, and planes/axes of movement. Course work focuses on practical application for the fitness professional.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Use proper anatomical and kinesiological terminology.
2. Identify bony anatomy, joints and ligaments/tendons.
3. Identify muscular anatomy including origins, insertions and actions.
4. Identify joint motions, the muscles that initiate them, and the planes and axes in which they occur.
5. Identify synergist and antagonist muscles.
6. Identify and apply knowledge of muscle contractions including how muscles function in isometric, isotonic, isokinetic, concentric and eccentric contractions.

FLS 170 - Mental Dynamics of Exercise and Sport

3 Credit(s)

This course introduces students to the mental dynamics of exercise and sport. Designed for exercise professionals to explore and apply the concepts of motivation, adherence, anxiety, over training and behavior modification in an exercise and sport setting.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Identify and communicate the major issues and concepts pertaining to the mental dynamics of exercise and sport
2. Apply appropriate exercise and sport psychology, skills and techniques, as a professional in the field, to both clients and athletes
3. Engage in critical thinking and conveying ideas regarding exercise and sports concepts through meaningful discussion and projects
4. Apply appropriate exercise and sport theories, skills, and techniques to one's own sport and exercise experiences
5. Develop and apply appropriate strategies and techniques designed to prevent exercise and sport burnout and overtraining

FLS 185 - Career Preparation

3 Credit(s)

Introduction to career and management topics specific to the fitness industry including: fitness program administration, personnel management, risk management, legal liability, scope of practice, equipment acquisition, facility planning and maintenance. Guidance in job search practices, interviewing techniques and resume development.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Examine various programming and business models within the fitness industry.
2. Describe key personnel issues and practices.
3. Understand and apply different fitness industry marketing and branding

strategies.

4. Outline components of facility design, planning, resource management and equipment purchasing.
5. Identify risk management issues, including safety, legal liability, and insurance requirements.
6. Explore various fitness industry resources and technology.
7. Develop a personal business plan.
8. Create a quality resume and demonstrate effective interview techniques

FLS 190 - Injury Prevention and Management

3 Credit(s)

Assists students in developing and progressing exercise prescriptions for individuals with the goal of preventing or managing common athletic/exercise related injuries. Students learn how to work within their scope of practice in this framework and collaborate with other healthcare professionals.

Prerequisite: FLS 160 must be completed with a letter grade of C- or better. P/NP is not accepted.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Properly use anatomical and kinesiological terminology.
2. Understand and analyze the physiological processes of inflammation and pain.
3. Understand and apply a joint-by-joint approach to warm-up and training.
4. Demonstrate knowledge of and the ability to manage common orthopedic injuries in conjunction with appropriate allied health care team members.
5. Develop exercise progressions for major regions of the body.
6. Develop instructional handouts for home exercise programs.
7. Demonstrate knowledge of safe lifting and gait mechanics

FLS 214 - Physical Exercise and Healthy Aging

3 Credit(s)

Teaches the physiological changes that occur during the aging process and the positive of exercise on disease risk, longevity and quality of life. Aging theories, structural and functional changes and exercise programming for elderly populations will be discussed.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Understand the role of gender, culture, ethnicity and socioeconomic status involved in health disparities (i.e., the difference in incidence, prevalence, mortality and burden of disease and other health conditions among elderly populations)
2. Compare and contrast different theories of aging
3. Differentiate between the major body systems affected by the aging process (i.e., cardiorespiratory, musculoskeletal, nervous and sensory)
4. Understand the relationship between proper nutrition and specific elderly groups
5. Recognize the common diseases involved with aging
6. Consider adaptability of fitness training to elderly populations focusing on the functional approach, aerobic and non-aerobic fitness and muscular fitness
7. Analyze fitness programming as it applies to elderly populations

French

FR 101 - First-Year French

5 Credit(s)

This is the first course in a sequence of three courses designed for students with no prior language study. In French 101, 102, and 103, students develop their intercultural competency and skills in speaking, listening, reading and writing through short cultural readings, videos, songs, and short conversations. Computer work is required.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Communicate on very familiar topics by engaging in short, simple, and predictable exchanges with the help of gestures or visuals (Interpersonal Communication – Novice low/mid)
2. Present basic information about self, friends, and close family members using practiced or memorized words, phrases, and expressions (Presentational Speaking – Novice low/mid)
3. Write lists and notes on familiar topics using learned phrases and memorized expressions (Presentational Writing – Novice mid)
4. Identify basic facts from familiar words and phrases when supported by context such as gestures or visuals (Interpretive listening – Novice Mid)
5. Identify basic facts and topics from familiar words, phrases, and sentences in

short, simple, uncomplicated texts related to familiar topics in which the context (format, illustrations) supports meaning. (Interpretive Reading – Novice Mid/High)

6. Identify some practices that are found in some French-speaking countries; identify some basic cultural beliefs and values; survive in an authentic cultural context (Intercultural competence - Novice)

FR 102 - First-Year French

5 Credit(s)

This is the second course in a sequence of three courses designed for students with no prior language study. In French 101, 102, and 103, students develop their intercultural competency and skills in speaking, listening, reading and writing through short cultural readings, videos, songs, and short conversations. Computer work is required.

Prerequisite: FR 101 with a letter grade of C- or higher, or Pass

Learning Outcomes

Students who successfully complete this course will be able to:

1. Communicate on very familiar topics by engaging in short, simple, and predictable exchanges (Interpersonal Communication-Novice low mid)
2. Present basic information about self, people, places, the past, using words, phrases and memorized expressions (presentational Speaking - novice low/mid)
3. Write lists and notes on familiar topics using learned phrases and memorized expressions (presentational Writing-Novice mid)
4. Utilize contextual clues to understand and interpret the main ideas of short stretches of speech with different accents and other authentic materials such as signs, advertising, newspaper articles, and short literary works (interpretive reading and listening-Novice Mid to high)
5. Identify some practices that are found in some French-speaking countries; identify some basic cultural beliefs and values; survive in an authentic cultural context (Intercultural competence -Novice)

FR 103 - First-Year French

5 Credit(s)

This is the third course in a sequence of three courses designed for students with no prior language study. In French 101, 102, and 103, students develop their intercultural competency and skills in speaking, listening, reading and writing through short cultural readings, videos, songs, and short conversations. Computer work is required.

Prerequisite: FR 102 with a letter grade of C- or higher, or Pass

Learning Outcomes

Students who successfully complete this course will be able to:

1. Communicate on familiar topics, asking and answering simple questions (some practiced, some original), requesting and providing information, expressing basic needs, asking about and reacting to preferences, feelings and opinions using simple sentences most of the time. (Interpersonal Communication – Novice high)
2. Present basic information about self, friends and close family members and express preferences on familiar and everyday topics of interest using simple sentences most of the time. (Presentational Speaking and writing--Novice high)
3. Identify the topic and some isolated facts and elements from simple sentences in short informational and fictional texts (interpretive Reading--Novice High/Intermediate Low)
4. Understand the main idea, familiar questions, and statements in short conversations. (Interpretive Communication--Novice High)
5. Identify some practices that are found in some French-speaking countries; identify some basic cultural beliefs and values; survive in an authentic cultural context (Intercultural competence - Novice)

FR 107 - Beginning French Conversation

1 Credit(s)

This course offers conversational practice in French at the beginning level. Offered P/NP, winter term only.

Prerequisite: FR 101

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Acquire and use a vocabulary base in various topics of the course content.
2. Communicate and exchange information effectively about him/herself with others
3. Discuss points of view
4. Improve pronunciation and listening skills
5. Exercise improved cultural awareness
- 6.

FR 188 - Study Abroad: French Language and Culture in Normandy

6 Credit(s)

This course is a study abroad experience encompassing intensive language study with an emphasis on oral communication, and French history and culture in the Normandy and Paris regions. The course is designed to provide students with the necessary language tools to communicate successfully in a full immersion learning environment, to encourage them to reflect on cultural values and develop an awareness and sensitivity to cultural differences, and to inspire them to engage in further French language studies.

Prerequisite: FR 101 or equivalent

Learning Outcomes

Upon successful completion of this course, the student will:

1. Have an improved proficiency in the French language including listening, reading, writing, and speaking
2. Have an improved understanding of French history and culture, particularly of the Normandy region
3. Acquire a new perspective and deeper understanding of their own culture when encountering differences between it and the new culture

FR 201 - Second-Year French

4 Credit(s)

This is the first course in a sequence of three courses of intermediate French. In French 201, 202, and 203, students develop their intercultural competence, and skills in speaking, listening, reading, and writing through engaging cultural readings, short films, current news, and discussion. Computer work is required.

Prerequisite: FR 103 with a letter grade of C- or higher, or Pass

Learning Outcomes

Students who successfully complete this course will be able to:

1. Request and provide information in conversations on familiar topics by creating simple sentences and asking appropriate follow-up questions. (Interpersonal Communication--Intermediate Low)
2. Identify the topic and related information from simple sentences in short informational and fictional texts. (Interpretive Reading--Intermediate Low)
3. Identify the main idea in short, straightforward conversations. (Interpretive Listening--Novice High/Intermediate/Low)
4. Present on familiar and everyday topics, on personal information about their lives, and on activities and events, using simple sentences. (Presentational Speaking and Writing- Intermediate Low)
5. Compare practices and products related to everyday life and personal interests or studies and interact at a functional level in some familiar contexts. (Intercultural Competence - Intermediate)

FR 202 - Second-Year French

4 Credit(s)

This is the second course in a sequence of three courses of intermediate French. In French 201, 202, and 203, students develop their intercultural competence, and skills in speaking, listening, reading, and writing through engaging cultural readings, short films, current news, and discussion. Computer work is required.

Prerequisite: FR 201 with a letter grade of C- or higher, or Pass

Learning Outcomes

Students who successfully complete this course will be able to:

1. Participate in conversations and state viewpoints on familiar topics using sentences and series of sentences (Interpersonal communication – Intermediate-mid)
2. Make a presentation on a variety of familiar and researched topics using connected sentences (Presentational speaking – Intermediate-mid)
3. Write on a wide variety of familiar topics using connected sentences (Presentational writing – Intermediate-mid)
4. Understand the main idea in messages and presentations on a variety of topics and follow the main idea of overheard conversations (Interpretive listening – Intermediate-mid)
5. Understand the main idea of short straightforward informational and fictional texts. (Interpretive reading – Intermediate-mid)
6. Compare practices and products related to everyday life and personal interests or studies and interact at a functional level in some familiar contexts. (Intercultural Competence - Intermediate)

FR 203 - Second-Year French

4 Credit(s)

This is the first course in a sequence of three courses of intermediate French. In French 201, 202, and 203, students develop their intercultural competence, and skills in speaking, listening, reading, and writing through engaging cultural readings, short films, current news, and discussion. Computer work is required.

Prerequisite: FR 202 with a letter grade of C- or higher, or Pass

Learning Outcomes

Students who successfully complete this course will be able to:

1. Exchange information in spontaneous spoken and written conversations and some discussions on a variety of topics and in various time frames, using connected sentences and, sometimes, paragraphs. (Interpersonal Communication-- Intermediate High)
 2. Understand the main idea and key information in various time frames in short, straightforward informational and fictional texts. (Interpretive Reading-- Intermediate Mid/Intermediate High)
 3. Identify the main idea and key information in short, straightforward conversations in various time frames. (Interpretive Listening--Intermediate Mid/Intermediate High)
 4. Give detailed, short presentations on a variety of familiar topics and some concrete topics they have researched, using various time frames. (Presentational Speaking and Writing- Intermediate High)
 5. Compare practices and products related to everyday life and personal interests or studies and interact at a functional level in some familiar contexts. (Intercultural Competence - Intermediate)
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FR 211 - Conversational French

2 Credit(s)

This is an intensive weekend conversation class designed to give students the opportunity to improve their oral communication skills and intercultural competence. Students speak and hear only French while participating in cultural activities and games, discussions following guest speaker presentations, and French and Francophone-themed meals. A film viewing in French introduces and expands on vocabulary and expressions in authentic cultural contexts. Students have the opportunity to share experiences and opinions, exchange ideas, and practice using various forms and functions of the target language.

Prerequisite: FR 103 or equivalent

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Acquire and use a vocabulary base in various topics
 2. Communicate and exchange information effectively about him/herself with others
 3. Discuss points of view
 4. Improve pronunciation and listening skills
 5. Develop a deeper understanding of one's own culture as well as learning about the cultures of others
 6. Exercise social responsibility and decision-making that values various cultures and backgrounds
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FR 288 - Study Abroad: French Language and Culture in Normandy

6 Credit(s)

This course is a study abroad experience encompassing intensive language study with an emphasis on oral communication, and French history and culture in the Normandy and Paris regions. The course is designed to provide students with the necessary language tools to communicate successfully in a full immersion learning environment, to encourage them to reflect on cultural values and develop an awareness and sensitivity to cultural differences, and to inspire them to engage in further French language studies.

Prerequisite: FR 101

Learning Outcomes

Upon successful completion of this course, the student will:

1. Students will have an improved proficiency in the French language including listening, reading, writing, and speaking
2. Students will have an improved understanding of French history and culture, particularly of the Normandy region
3. Students will acquire a new perspective and deeper understanding of their own culture when encountering differences between it and the new culture

General Science**GS 101 - General Science (Nature of the Northwest)**

4 Credit(s)

Introduction to the geology, plants and animals in Central Oregon and along the Pacific coast. Students identify rocks, flora and fauna and look at the biodiversity between habitats on required field trips. Includes environmental issues and a scientific inquiry project. Lab included.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Explain the water cycle and its importance
2. Explain the rock cycle and be able to identify common rocks and fossils found in Oregon
3. Explain how plate tectonics helped form Oregon's topography with an emphasis on the Cascade Mountains, Coast Range, and Willamette Valley
4. Identify the common plants and animals in the various ecoregions and habitats which this course will be covering: Riparian Areas; Uplands and Forests; Coastal, Intertidal and Offshore Oceanic Environs
5. Discuss environmental problems that deal with water issues, geology, and selected flora and fauna including invasive species
6. Discuss ways to increase environmental awareness and sustainability 7.

Integrate geology, botany, and zoology as a comprehensive whole

GS 106 - Earth, Sea, Sky

4 Credit(s)

This course surveys Earth and space sciences for non-science majors. Topics include geologic processes, time, hazards, oceans, atmosphere, and cosmology from asteroids, planets, stars, to galaxies and beyond. Labs include basic scientific techniques, minerals, rocks, maps, and space imagery. Lab included.

Prerequisite: MTH 052 or above with grade of C- or better or placement test or instructor consent

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply scientific reasoning using methodologies of geology, oceanography, meteorology, climatology, and astronomy to explore the relationships of physical sciences and the real world and thereby experience the joy of discovery.
 2. Work in a collaboration with others to measure and collect data related to earth science disciplines and astronomy, to analyze and graph the data.
 3. Practice discussing and formulating geologic concepts and processes that allow interpretations and conclusions based on their own observations.
 4. Analyze the interrelationships among geology, oceanography, meteorology, climatology, and astronomy and society, including the ethical use of science in society.
 5. Analyze the development of plate tectonic theory especially in light of the political situation at the time the theory was developing.
 6. Apply plate tectonic theory to specific situations and analyze the limitations of plate tectonic theory.
 7. Appraise past and current state of climate change theories and compare them with past and present climate change data.
 8. Evaluate the ethics of science early on with a look at the scientific method and how personal biases influence the thought process.
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GS 108 - Oceanography

4 Credit(s)

Surveys basic geological, physical, chemical, and biological processes of oceans, including geology, plate tectonics, seawater properties, waves, currents, tides, ocean life, biodiversity, marine resources and pollution. Lab included.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Identify, describe, and interpret geological, physical, chemical, and biological processes of the world ocean, including plate tectonics, seawater properties, waves, currents, tides, ocean life, biodiversity, fisheries, and marine resources and pollution.
2. Evaluate and question media reports about these subjects.
3. Assess and examine problems related to the ocean's influence on climate and global climate change, coastal erosion and sediment deposition, marine physical and biological resources, pollution, and other impacts on human civilization.
4. Identify and compare various technologies developed for studying oceans, including depth sounding; measuring temperature, pressure, and salinity of

- ocean water; sampling sea floor sediment and rock; and identifying and measuring the impacts of human activity on marine life.
- Identify the limits of our scientific knowledge about some aspects of the ocean, such as the properties of the ocean floor and our incomplete knowledge of marine life.
 - Assess marine hazards such as tsunamis, hurricanes, storm surges, and coastal erosion and how they relate to human society.
 - Identify appropriate technologies being developed to mitigate structural damage, loss of human life, and destruction of the environment due to these hazards.
 - Apply the theory of plate tectonics to explain the processes that form ocean basins and shape the sea floor.
 - Apply the theory of evolution and related concepts to understand life in the ocean.
 - Describe and explain how the Coriolis effect influences the movement of ocean water.
 - Describe and explain how the Ekman transport concept explains why water in a surface current does not move in the same direction as the wind that forms the current.
 - Describe the major physical and biological marine resources, how these resources benefit human society, and how exploitation of these resources can cause serious problems for humans, marine organisms, and the environment.

GS 109 - Meteorology

5 Credit(s)

This course is a survey of the field of meteorology with detailed emphasis on the elements specific to the aviation industry. Students exit this course understanding how to access, analyze and use weather data to make decisions essential for safe flight.

Learning Outcomes

Upon successful completion of this course, students will be able to:

- Identify, describe, and predict basic interactions between meteorological properties and processes to define safe operational windows
- Compile, accurately interpret and appropriately apply prepared meteorological data and forecasts from scientifically valid government and private sources to define safe operational windows
- Explain the functioning, strengths, and weaknesses of currently available and emerging meteorological infrastructure that provides longer-term or higher resolution weather data to facilitate climate assessments
- Identify and explain the socio-economic costs and benefits from public investment in, and sharing the results of, standardized reliable weather observation systems and forecasts

GS 142 - Earth Science: Earth Revealed

4 Credit(s)

Introduces geology and integrates topics of Earth's history, plate tectonics, minerals, rocks, volcanism, earthquake activity, weathering, rivers, groundwater, glaciers, and coasts. Lab exercises are completed at home or in the field. Lab included.

Learning Outcomes

Students who successfully complete this course will be able to:

- Discuss the whole earth structure and relate to the theory of plate tectonics and the rock cycle
- Describe mountain building processes and the relationship to tectonic plate boundaries
- Explain the formation of volcanoes at plate boundaries and at intraplate locations, and classify basic volcano types
- Describe concepts of ocean waves, coastal erosion and deposition
- Relate the processes of weathering, erosion, transport and deposition in the context of the rock cycle and geologic surface processes
- Identify and classify mass wasting events
- Be familiar with soil horizons and soil-forming processes, and the importance of soil preservation
- Use physical mineral properties to describe and identify common rock forming minerals
- Apply textural and compositional properties to identify common rock types (Igneous and/or Sedimentary)
- Discuss and analyze common surface water and groundwater settings, and integrate the importance of these natural resources

- Utilize common coordinate systems to locate geographic features on a topographic map and describe general topographic features based on contour lines
- Identify and research potential hazards related to geologic natural disasters, flooding, desertification and climate change

GS 201 - Scientific Skepticism - Someone is Wrong on the Internet!

4 Credit(s)

The goal of this course is to explore scientific skepticism from a variety of angles. We will examine controversial scientific topics such as evolution, climate change, vaccine safety, GMOs and alternative medicine. The foundations of scientific skepticism including psychology, social science, logical fallacies, philosophy of science, media, statistics, criticism of science and the history of science and skepticism will provide a framework. Information literacy, science communication and debate skills will be developed throughout.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

- Investigate claims using reliable resources.
- Evaluate trustworthiness of sources (scientific literature, predatory journals, government agencies, media, scientific organizations)
- Understand and recognize strong vs. weak scientific arguments.
- Understand and recognize logical fallacies in the context of scientific arguments.
- Identify red flags.
- Understand differences between science, pseudoscience, bad science and bullshit.
- Apply this knowledge to assessing likely validity of arguments.
- Learn and recognize M.O.s of pseudoscience (pseudo-experts, cherry picking, innuendo, moving goalposts, self-refuting ideas, etc.)
- Learn to distinguish skeptics from deniers.
- Ask, answer scientific questions to help evaluate arguments.
- Seek, identify and interpret relevant scientific background.
- Seek, identify and evaluate relevant journalistic background as needed.
- Understand and identify cognitive biases, assumptions, framing in self and others.
- Analyze and debate issues: Formulate goals, tactics, strategies.
- Gather appropriate information, execute plans and modify as appropriate.
- Improve metacognitive skills: Reflect on knowledge and skills.
- Evaluate effectiveness. Propose improvements. Experiment with new ideas and strategies
- Evaluate strengths and weaknesses of experimental design and scientific studies. Learn to search for and identify scientific consensus.
- Improve understanding of statistics and uncertainty.
- Understand common statistical tools and identify common misuses of statistics.
- Become familiar with, understand and apply skepticism literature on common topics (see list above)
- Learn and understand standard arguments (especially PRATTs) on common topics.
- Apply knowledge to discussions and debates.
- Demonstrate openness to other views and intellectual honesty in discussing them.
- Explore impacts of decisions on individuals, communities and the world.
- Examine scientific basis, or lack thereof, for individual and group biases.
- Employ debate strategies that respect others.
- Understand and articulate issues in foundations of science, science communication, media and science, risk assessment, statistics.
- Apply understanding to analysis, discussion and debates of scientific issues.

Geographic Information Science

GIS 151 - Digital Earth

4 Credit(s)

Digital Earth is an introduction to geospatial concepts and includes both lectures and hands-on computer applications. Students will use several geospatial technologies as they learn fundamental concepts of data analysis, data capture, and mapping. Students will learn how technologies such as GPS, Google Earth, ArcGIS Online, and ArcGIS desktop are used to solve real-world problems and aid critical decision making. Students who take this class online must have a computer with a windows operation systems (PC or a MAC with a windows boot option) OR be able to attend the GIS open lab hours. Lab included.

Prerequisite: MTH 060 or higher

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Discuss the holistic discipline of geography and the role of geographers in the workplace
2. Differentiate between tabular and geospatial data
3. Display spatial information on maps and other geographic representations
4. Use appropriate geographic tools and technologies
5. Discuss the characteristics and purposes of geographic representations such as maps, globes, graphs, and diagrams, aerial and other photographs, and satellite produced images
6. Analyze a variety of contemporary issues in terms of earth's physical and human systems
7. Discuss how to use geographic knowledge, skills, and perspectives to analyze problems and make decisions

GIS 245 - GIS 1

4 Credit(s)

GIS 1 is the second in the series of Geographic Information Science and Technology courses. The course will build on the foundations of geospatial technology introduced in GIS/GEOG 151. Students will use ArcInfo software to explore cartographic principles, projections, data capture, data structures, and data analysis. Access to a computer outside of class (new within last 3 years) is strongly recommended. Students who do not have access to a computer may be at a disadvantage. Lab included. Students who take this class online must have a computer with a windows operating system (PC or a MAC with a windows boot option) OR be able to attend the GIS open lab hours.

Prerequisite: GIS 151 or instructor consent

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior: Use US census data, other data, and environmental data to analyze and visualize human interactions and human development related to: urban growth, crime, urbanization, ethnicity, religion, etc.
2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live: Use US census data, other data, and environmental data to analyze and visualize human interactions and human development related to: urban growth, crime, urbanization, ethnicity, religion, etc.
3. Understand the role of individuals and institutions within the context of society: Students will: understand the importance of data literacy by demonstrating data inconsistencies in collection and interpretation
4. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry: Students will: understand the cartographic application of data from various measurement levels – ratio, nominal, interval, and ordinal.
5. Utilize appropriate information literacy skills in written and oral communication: Students will be able to choose appropriate information/data needed to address specific problems. They will be able to evaluate information /data accuracy and adjust necessary data parameters. Students will discuss the ethical dilemmas related to the creation and use of spatial data and its impact on: The GIS profession, GIS colleagues, and the public.
6. Understand the diversity of human experience and thought, individually and collectively: Students will: evaluate various census data related to socioeconomic status, age, religion and ethnicity
7. Apply knowledge and skills to contemporary problems and issues: Students will: collect, edit, and analysis data to create visual and graphic information.

GIS 246 - GIS 2

4 Credit(s)

GIS 2 is the third in a series of Geographic Information Science and Technology courses. The course will focus on advanced skills and techniques used to create, analyze, and display spatial data in a geographic information system. The following skills and techniques will be emphasized: data and project management, digitizing, editing, address matching, geo-referencing, overlay analysis, spatial analysis, problem solving (related to spatial concepts and software), and visual design. Access to a computer outside of class (new within 3 years) is strongly recommended. Students who do not have access to a computer may be at a disadvantage. Lab included. Students who take this class online must have a computer with a windows operating system (PC or a MAC with a windows boot option) OR be able to attend the GIS open lab hours.

Prerequisite: GIS 245

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior: Use US census data, other data, and environmental data to analyze and visualize human interactions and human development related to: food insecurity, flood and tsunami hazards, and tree canopy cover.
2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live: Use US census data, other data, and environmental data to analyze and visualize human interactions and human development related to: food insecurity, flood and tsunami hazards, and tree canopy cover.
3. Understand the role of individuals and institutions within the context of society: Students will: understand the information and analysis on decision making.
4. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry. Students will: discuss ethics and the use of data as it relates to: public access, human tracking, public safety.
5. Utilize appropriate information literacy skills in written and oral communication. Students will be able to choose appropriate information/data needed to address specific problems. They will be able to evaluate information /data accuracy and adjust necessary data parameters. Students will discuss the ethical dilemmas related to the creation and use of spatial data and its impact on: The GIS profession, GIS colleagues, and the public.
6. Understand the diversity of human experience and thought, individually and collectively. Students will: evaluate social data to summarize community demographics.
7. Apply knowledge and skills to contemporary problems and issues. Students will: collect, edit, and analysis data that focus on real-world hazards – earthquake, tsunami or flood – to determine needs for social support and infrastructure upgrades

Geography

GEOG 141 - Natural Environment

4 Credit(s)

This course is designed to introduce geographic concepts of location, pattern, movement, and region used to understand the physical environment. Students will apply geographic principles, theories, and methods to understand the physical environment and identify key processes shaping the Earth's surface. Students will use, graphs, maps, and GIS technologies to acquire, process, and report information from spatial perspectives as they explore the causes and impacts of natural disasters: extreme weather, earthquakes, landslides, floods, and volcanic eruptions. Global Climate Change.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior: Apply Geographic spatial analysis and scientific methods to understand the relationship between natural environment and human activity/response.
2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live: Apply Geographic knowledge in a scientific "systems approach" to understand location, place, region and overall diversity of nature and resulting cultural activities.
3. Understand the role of individuals and institutions within the context of society: Reading material, current natural hazard events and structured class discussions focus on personal responsibility and collective impacts of human activity. Settlement patterns affecting human alteration of the natural environment through modern technology and human impacts are investigated in scales ranging from global to local.
4. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry: Course covers multiple scientific theories, concepts and methodology used to understand the lithosphere, atmosphere, hydrosphere and biosphere of the earth. Discussion of diagrams, models and maps based on empirical data, statistical analysis and qualitative data show how scientific inquiry supports theories.
5. Utilize appropriate information literacy skills in written and oral communication: Information Literacy is achieved by Geographic Information

Systems (GIS) activities, online animations, documentaries, and use of on-line data bases and search engines for research.

6. Understand the diversity of human experience and thought, individually and collectively: Course addresses cultural response to scientific findings. Responses vary regionally, politically and economically.
7. Apply knowledge and skills to contemporary problems and issues: Current natural hazard events are brought forward as examples on local to global scale.

GEOG 142 - Introduction to Human Geography

4 Credit(s)

This course is an introduction to the field of human geography. Students will explore the relationships between people and the places and spaces in which they live. The course focuses on various sub-themes of human geography such as: demographics, religion, economics, food, migration, ethnicity, political systems, and globalization. Students will use maps, graphs, and mapping technology to collect, organize and display geographic information related to the patterns of human geography.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior: Understand spatial geographic models, maps, diagrams to demonstrate concepts of culture region, cultural diffusion, globalization, cultural landscape and the various impacts of nature.
2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live: Identify locations of nations and their cultural integration with regard to language, religion, ethnic make-up, cultural landscapes and cultural histories which have created a diverse world.
3. Understand the role of individuals and institutions within the context of society: Understand the importance of "place" to cultural identity of individuals and institutions.
4. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry: Create maps and analyze theories using Geographic Information Science (GIS), maps, graphs and diagrams from qualitative and empirical data.
5. Utilize appropriate information literacy skills in written and oral communication: Information Literacy is achieved by Geographic Information Systems (GIS) activities, online sources, documentaries, online data bases and search engines for research.
6. Understand the diversity of human experience and thought, individually and collectively: This course addresses spatial concepts to show the vast scale and diversity of culture through movement of cultural ideas, creation of human built landscapes and the resulting impact on environmental and social change.
7. Apply knowledge and skills to contemporary problems and issues: We discuss migration, globalization and other contemporary topics of the human condition as a result of global change.

GEOG 201 - World Regional Geography

4 Credit(s)

Regional geography gives students the skills and tools to understand and interpret the events that shape our lives. Students will explore major geographic regions focusing on the ways humans create "places" through culture and adapting the physical environment. Students will apply a spatial perspective to reveal how physical and cultural attributes impact the balances and imbalances in our increasingly globalized world and how levels of development impact geographic differentiation.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Summarize the impacts of migration.
2. Describe the current areas of ethnic conflict and provide multiple perspectives for their causes.
3. Describe the current patterns of economic inequality and understand their origins.
4. Analyze how colonization impacts political stability and economic opportunity.
5. Analyze the patterns of urban development.
6. Design a UNICEF Aid package for a current UNICEF Global Project and address the possible positive and negative impact so such aid.

Geology

G 101 - Earth's Dynamic Interior

4 Credit(s)

Introduces the geology of Earth's structure, formation of rocks, how plate interactions cause earthquakes and create volcanoes and mountains. Labs include problem solving, minerals, rocks, volcanology, seismology, resources, and simple geologic maps and structures. Take either G 101 or G 102 first. Lab included.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Describe and identify common rocks and rock-forming minerals, classifying minerals by using their physical properties
2. Contrast how igneous, metamorphic, and sedimentary rocks form and compare their compositions and textures
3. Describe how magma chemistry influences the types of igneous rocks that form and the eruptive style and types of volcanoes found in a region
4. Use seismic wave records to interpret details of earthquakes and the Earth's interior
5. Describe plate tectonics and plate boundaries
6. Identify and explain the rocks, deformation, earthquakes, volcanism, hazards, topography, stresses, folds, and faults associated with plate boundaries, plate movement and accretion and shown in geologic maps and cross sections
7. Classify simple and complex types of mountain belts based on how they formed

G 102 - Earth's Dynamic Surface

4 Credit(s)

Introduces the geology of Earth's surface and related hazards. Topics include erosion, deposition, weathering, soils, landslides, streams, groundwater, oceans, coasts, glaciers, deserts, climate, problem solving, topographic maps, and remote sensing of landforms. Take either G101 or G102 first. Lab included.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Recognize, describe, and interpret landforms in the field or using photos, maps, models, case studies, or other representations. This includes landforms associated with: streams, glaciers, deserts, coastlines, mass wasting, and groundwater
2. Describe and analyze processes associated with landscape evolution and the formation of landforms, including: erosion and deposition, weathering and soil, sediment transport, the hydrologic cycle, plate tectonics
3. Assess and evaluate human interactions with earth surface processes, including environmental, social, and economic impacts and human hazards related to mass wasting, flooding, groundwater pollution, groundwater depletion, global climate change, sea level transgression, and desertification
4. Identify rock and mineral properties and aspects of the rock cycle that impact geomorphology

G 103 - Evolving Earth

4 Credit(s)

Surveys geologic history of Earth and life. Topics include sedimentary environments, strata, plant and animal evolution, and how plate tectonic actions built continents. Labs include problem solving, fossils, relative ages of rock layers, geologic maps, and cross-sections. Advise G101 or G102 first. Lab included.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Use evidence from sedimentary rocks and structures to identify and interpret paleoenvironments of deposition.
2. Use principles of age dating and various stratigraphic relationships to decipher geologic and tectonic events over time.
3. Recognize methods of fossil preservation; describe, identify and classify notable fossil species from the Paleozoic, Mesozoic and Cenozoic.
4. Interpret the sequence of geologic events and development of life as exposed in the rock and fossil records, using geologic maps and cross sections.
5. Apply their understanding of various geologic theories, including plate tectonics and evolution.
6. Describe major tectonic events that shaped North America over time.
7. Describe and explain topics such as the origin and changing configuration of the Earth, and the chronological progression of different life forms which have lived on Earth.

8. Recognize major fossil groups and their ages, and geologic structures and their placement in mountain building events, and apply basic stratigraphic principles to interpret the geologic history of select regions of the world.
9. Assess and examine theories for the formation of mountain ranges and be able to match different types of sedimentary rocks to the specific environments in which they formed.
10. Examine and discuss early evolutionary theories, and how they are being reconsidered/revised in light of recent studies.
11. Discuss and evaluate past global climate changes and apply that knowledge to recent climate change.
12. Examine theories of, plate tectonics, mountain building, ancient climate change, evolution, uniformitarianism and catastrophism for comparison and assessment.
13. Discuss the changes throughout geologic history to Earth and life due to the processes covered in this course, in particular the evolution of humans and the development of human culture, including how that culture does/could have an effect on Earth's surface, life, and climate

G 146 - Rocks and Minerals

4 Credit(s)

Examines rocks, minerals, economic geology, resources, mining, environmental impacts, energy alternatives, resource conservation and problem solving. Labs explore how rocks, minerals and gems form, are classified, their symmetry, textures and structures, and how to decipher their geologic histories. Lab included.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Critically examine the roles that rock and mineral resources play in making choices affecting sustainability of the environment.
2. Test the properties of minerals, and to recognize common rock-forming and resource minerals.
3. Describe the chemistry of minerals and recognize mineral groups and silicate subclasses and their interrelationships.
4. Sketch space lattices, and sketch or demonstrate the symmetry and characteristics of the seven crystal systems.
5. Explain the formation of minerals, gems, ore deposits, and specific types of igneous, sedimentary and metamorphic rocks.
6. Draw, identify, and describe the textures, structures, mineralogy and chemistry of rocks, and be able to recognize common and important igneous, sedimentary and metamorphic rocks.
7. Demonstrate proper sample collection techniques, labeling, documentation, and ethics.
8. Report how rocks and minerals are used as resources and the relationships among rocks, minerals, gems and society.
9. Assess the methods, hazards and environmental impacts of mining and mineral/rock use.

G 147 - National Parks Geology

4 Credit(s)

Introduces geologic history, plate tectonics, and landform formation in national parks and monuments, including western parks, among others. Topics: volcanoes, mountains, stream and glacial erosion, rocks, rock layers and structures, topographic and geologic maps. May have field trips to parks. Lab included.

Prerequisite: Recommended: complete another geology class first.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Describe and explain the geologic origin of several national parks of the western United States.
2. Classify park rocks, landforms, mountain-building episodes and plate tectonic settings.
3. Assess and examine theories of formation of various rocks, features, and mountain ranges in national parks, including the rock cycle, volcanism, glaciation, plate tectonics, and patterns of erosion and deposition in the parks studied.
4. Evaluate the effects of park tourism within the parks and consequences of mining and other resource extraction in neighboring areas.
5. Interpret the sequence of geologic history, inter-relationships of Earth's cycles, and development of life as exposed in the rock record of the national parks and monuments
6. Evaluate and interpret the history and culture behind the development of the National Park system and the sustainability of the National Park System

G 148 - Geologic Hazards

4 Credit(s)

Students learn the science, processes, causes and effects of geologic hazards, analyze the energy of earthquakes, volcanic eruptions, and meteorite impacts, the forces of landslides floods, and coastal erosion, the recurrence of these hazards, and study examples of local and global events. Lab included.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Describe various geologic hazards and the science underlying them.
2. Define a geologic hazard and be able to determine potential danger, damage and human impact the hazard causes.
3. Calculate earthquake magnitude, energy released by earthquakes, energy released by volcanic eruptions, speed of a tsunami, energy of a meteorite/bolide impact and recurrence interval of various hazards and explain and analyze the significance of these calculations.
4. Explain and evaluate efforts to mitigate geologic hazards.
5. Analyze and explain hazards maps and determine which areas are susceptible to specific hazards and where people are at greatest risk from these hazards.
6. Explain the causes and consequences including human and social impacts of the following natural hazards: earthquakes, tsunamis, volcanic eruptions, floods, mass movements and landslides, coastal erosion and meteorite/bolide impacts.
7. Critique and evaluate media reports concerning geologic hazards.
8. Describe and evaluate specific recent and/or historical geologic disasters, explaining the geologic causes and physical and social consequences of the events.

G 201 - Earth Materials and Plate Tectonics

4 Credit(s)

G 201, 202, 203—for science majors (take G201 or G202 before G203). Global plate tectonic influences on Earth's internal structure, mountains, deformation, magnetism, earthquakes, volcanism, minerals and rocks. Labs explore rocks and minerals, geologic maps, structures, and resources. Lab included.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Identify and classify common rock-forming minerals and their physical properties
2. Explain behavior and characteristics of plate boundaries, and describe the evidence for plate tectonics
3. Classify igneous rocks and their minerals, and use plate tectonics to explain and describe the formation of igneous rocks, volcanoes, and their hazards
4. Classify sedimentary rocks and their minerals and use depositional processes to explain and describe the formation of sedimentary rocks and their structures
5. Classify metamorphic rocks, and use plate tectonics, temperature, and pressure to explain and describe the formation of metamorphic rocks, and their minerals, textures, and structures
6. Classify geologic structures, folds, and faults in geologic maps, and cross-sections, and use plate tectonics to explain and describe their formation
7. Use seismic waves to examine earthquakes and analyze Earth's interior and use plate tectonics to explain and describe the origin of earthquakes and related hazards
8. Use plate tectonics to explain and describe the origin of simple and complex mountain ranges and their types and characteristics

G 202 - Earth's Surface Systems

4 Credit(s)

Surface geologic processes. Includes landforms and hazardous geological systems, rocks and minerals, geologic and topographic maps, remote sensing, erosion, deposition, weathering, soils, mass wasting, streams, groundwater, coasts, glaciers, deserts, climate, and plate tectonics. Take this course or G 201 before G 203. Lab included.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Describe, explain, and interpret the processes of physical and chemical weathering.
2. Classify, explain, and analyze fluvial systems, mass wasting, glacial, coastal, and desert landforms and processes and evaluate land-use policy.

- Diagram and apply groundwater models; analyze recurrence intervals, measure and graph fluvial variables.
- Evaluate and question media reports about geologic hazards and evaluate case studies about them.
- Examine processes of erosion and deposition and stream and glacial flow and apply them to case studies of streams, mass wasting, coastal processes, dune migration, and glacial retreat and advance.
- Apply the theory of plate tectonics to Earth's surface processes.
- Interpret flood recurrence interval data and evaluate methods of mitigating flood hazards.
- Classify mass-wasting events by analyzing specific case studies from around the world, and analyze factors involved in mass wasting.
- Analyze streams using the graded stream model, interpret depositional models for fluvial systems, and recognize geomorphic features associated with streams.
- Analyze factors that influence coastal depositional systems, erosional features, and geomorphology.
- Survey glacial and eolian processes, coastal dune systems and desertification; and evaluate the effects of climatic change on deserts and glaciers

G 203 - Evolution of the Earth

4 Credit(s)

This course explores how plate motions, climate change, and other factors influence the distribution and evolution of continents and organisms through geologic time. Labs examine fossils, age relationship, stratigraphy and analysis of complex regions using geologic maps and cross-sections. Lab included.

Prerequisite: Grade of C- or better in G 101 or G 102 or G 201 or G 202.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Describe and explain the origin and changing configuration of the Earth through plate tectonics, and the evolutionary progression of different life forms that have lived on Earth.
- Identify major fossil groups and determine their ages, distinguish types of geologic structures and their placement in mountain building events, and use stratigraphic principles and recognition of rock types and fossils contained in them to interpret the geologic history of select regions of the world.
- Gain knowledge of new discoveries about the development of Earth and the life on Earth by investigating media sources, in addition to writing summaries and critiques of the information gleaned.
- Review early evolutionary theories, and how they are being reconsidered/revised in light of recent studies.
- Examine different types of sedimentary rocks and propose the specific paleoenvironments in which they may have formed.
- Collaboratively examine and use geologic maps and cross sections to construct paleogeographic and isopach maps.
- Examine theories of, and statistical and factual data for, plate tectonics, mountain building, ancient climate change, evolution, uniformitarianism and catastrophism for comparison and assessment.
- Evaluate the usefulness of the above theories and data when interpreting modern geologic settings and situations.
- Distinguish and discuss the changes throughout Earth's history of life due to geologic processes, including the evolution of humans and the development of human culture, allowing an assessment of how human culture does/could have an effect on Earth's surface, life, and climate.
- Annotate the sequence of geologic events and development of life as exposed in the rock and fossil records.
- Apply concepts of plate tectonics to locations of fossil forms to construct and interpret paleogeographic and paleobiogeographic maps and to evaluate past global climate change and formulate hypotheses as to recent climate change.
- Compare and contrast the modern and ancient: placement of continents and oceans; extent of glaciers; sea level change; atmospheric and climate conditions; life forms.
- Recognize the interconnectedness of all life on this planet and life's intimate connection with the Earth itself, including the importance of human stewardship vs. exploitation.
- Be knowledgeable of the data which exists that allows scientists to accomplish these evaluations

Health and First Aid

HE 152 - Drugs, Society and Behavior

3 Credit(s)

This course is designed to introduce the student to the social reality of drug use and drug users. We will study the historical significance and social construction of drug use, users, abuse, addiction and treatment options. We will explore the relationships between individual and group behavior and their relationship to society.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Evaluate the process of the social construction of drug use as a social problem
- Communicate the biological, psychological, and sociological theories that seek to explain drug using behavior; including an analysis of their basic assumptions, limitations, and implications for social policy
- Describe trends, patterns, and types of drug use in society
- Compare and contrast various drugs, both legal and illegal, used in American society, as well as the social reality that surrounds their use
- Analyze the various social responses (policies, enforcement, treatment) to drug use, its behavior, and cultural and social structural factors
- Communicate the potential disease risks and outcomes of drug use and addiction
- Describe the interacting dimensions of environmental, physical, mental, emotional, social, intellectual and occupational health
- Utilize independent critical thinking skills when analyzing evidence and non-evidence based health information

HE 161 - Cardiopulmonary Resuscitation

1 Credit(s)

This American Red Cross adult, child and infant CPR/AED certification class provides the skills needed to recognize and give lifesaving care to a person experiencing cardiac and respiratory related emergencies.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

- Understand how the Emergency Medical Systems (EMS) responds to emergencies.
- Understand the citizen responder's role in the EMS system.
- Identify the signs and symptoms of a breathing emergency.
- Understand how to respond and care for a breathing emergency.
- Identify the signs and symptoms of a cardiac emergency.
- Understand how to respond and care for a cardiac emergency.
- Perform all emergency techniques on adult, child and infant models.
- Understand the use of an AED in the emergency chain of response.
- Identify procedures for special resuscitation situations.
- Understand the value of using protective gloves and breathing devices

HE 209 - Human Sexuality

3 Credit(s)

Students will explore the physiological, psychological, and sociological factors that contribute to the development and expression of one's sexuality. This course is designed to increase self-awareness and knowledge about sexual relationships and sexual identity, in order to create positive sexual health outcomes.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Identify the relationship between sexual health and improving one's overall well-being
- Discuss effective communication strategies and skills that facilitate healthy relationships
- Evaluate the influences of physiology, psychology, and sociology on one's sexual and gender identity
- Describe the diversity of sexual behavior and expression
- Explain the interacting dimensions of environmental, physical, mental, emotional, social, intellectual and occupational health and how they can affect sexual health
- Utilize independent critical thinking skills when analyzing evidence and non-evidence based sexual health information

HE 212 - Women's Health

3 Credit(s)

Examines current issues in women's health and wellness with an emphasis on disease prevention, empowerment, and optimal well-being. Topics include biological, cultural, sociological, global, psychological, historical, and political influences that shape and define women's health and healthcare choices.

Learning Outcomes

The student will be able to:

1. Explain the physiological, psychological, and sociological factors that impact women's well-being.
2. Identify experiences that those who identify as 'women' may have, including; pregnancy, childbirth, sexual assault, gender discrimination on their overall health outcomes.
3. Identify common mental health issues among women.
4. Explain the influence of family, community and the socially constructed environment on women's health behaviors and outcomes.
5. Explain the interacting dimensions of environmental, physical, mental, emotional, social, intellectual and occupational health on women's health outcomes.
6. Utilize independent critical thinking skills when analyzing evidence and non-evidence based gender specific health information.

HE 240 - Holistic Health

3 Credit(s)

Explore how complementary, alternative, and integrative medicine contrasts with Western medicine, to make informed health care choices. Investigate traditional indigenous systems of healing throughout the world. Examine holistic therapies and sustainable approaches to address issues around stress, nutrition, inactivity, environmental health and well-being.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Describe the philosophies and practices of several holistic health therapies and how they compare to conventional Western (allopathic) medicine.
2. Identify specific situations when holistic therapies and conventional Western medicine can be complementary with one another.
3. Evaluate key lifestyle factors (e.g. exercise, nutrition, stress) that influence health and how they can be modified from a holistic and health promotion perspective.
4. Assess health-related values, beliefs, theories and complementary or integrative practices for the development of health behavior change strategies and personal plans.
5. Critically examine research and media on alternative and allopathic medicine including historical, cultural and social contexts of use when making personal health decisions.
6. Students will learn to recognize the sustainability of a particular health care product.
7. Describe how the interacting dimensions of environmental, physical, mental, emotional, social, intellectual and occupational health and how they can affect global health outcomes.
8. Utilize independent critical thinking skills when analyzing evidence and non-evidence based global health and sustainability information.
9. Challenge culturally constructed biases toward specific group identities that lead to stereotyping, micro-aggressions, implicit bias, systemic oppression and decreased individual and community health outcomes.

HE 250 - Personal Health

3 Credit(s)

Explore and investigate the influence of family, community and personal beliefs on happiness and well-being. Develop knowledge and awareness of the impact that interpersonal communication, stress, nutrition, emotional, mental and environmental health can have on your life and ability to reach your fullest potential.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Present current best practices and key theories in behavior change and health promotion.
2. Identify and describe factors that influence optimum physical and psychological health, build resilience and decrease stress including sleep, nutrition, social support, effect communication and self-awareness.

3. Explain the influence of family, community and environment on health behaviors and outcomes.
4. Outline strategies assessing self-awareness, behavior change, and modification of health risks.
5. Describe the connection between ecological sustainability and positive personal health outcomes.
6. Explain the interacting dimensions of environmental, physical, mental, emotional, social, intellectual and occupational health and how they can affect personal health outcomes.
7. Utilize independent critical thinking skills when analyzing evidence and non-evidence based health education and promotion information.
8. Challenge culturally constructed biases related to health beliefs, attitudes, behaviors, and outcomes

HE 251 - Wilderness First Aid

3 Credit(s)

This course includes fundamental first aid care and emergency procedures in an outdoor environment. Techniques of assessing and handling the sick and injured in a remote location are included. Assessing injured and/or ill victims in a variety of emergency situations will be studied and practiced.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Understand the differences between Wilderness First Aid and First Aid in an urban environment.
2. Assess a responsive and unresponsive person in a wilderness setting.
3. Develop the ability to identify and care for breathing emergencies.
4. Recognize the signals of a cardiac emergency and know how to care for someone who is having a cardiac emergency including CPR.
5. Demonstrate how to care for soft tissue wounds and bleeding emergencies.
6. Identify shock and take measures to control it.
7. Identify and care for strains, sprains, dislocations, and fractures.
8. Identify the signals of sudden illness including fainting, seizures, diabetic emergencies, stroke, poisoning, heat illness, cold emergencies and altitude sickness.
9. Identify possible head and spinal injuries and demonstrate how to care for them in a wilderness environment.
10. Evaluate an injured or ill person to determine if evacuation from the outdoor setting is needed.
11. Improvise methods of transporting an injured or ill person to a safe environment.
12. Respond to injuries caused by environmental hazards such as lightning

HE 252 - First Aid

3 Credit(s)

This course will focus on emergency first aid response, assessment, care, prevention and promotion. Students will study and practice and become certified in life-saving skills related to airway obstruction, CPR, shock, soft tissue musculoskeletal sudden illness, and a variety of other emergencies.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Demonstrate the skills and competencies needed to identify, care for and prevent; cardiorespiratory, musculoskeletal sudden illness and delayed help emergencies for all age groups, including the use of an Automated External Defibrillator (AED).
2. Demonstrate knowledge of the Emergency Action Steps and activation of the Emergency Medical Services system.
3. Describe the legal guidelines and responsibilities of providing victim care and the lay responder's role within the EMS system.
4. Describe the relationships between the interacting dimensions of environmental, physical, mental, emotional, social, intellectual and occupational health and the influence they have on safety awareness.
5. Utilize independent critical thinking skills when analyzing evidence and non-evidence based research on emergency first aid response and other preventive health information.

HE 255 - Global Health and Sustainability

4 Credit(s)

Investigate the global interacting cause-and-effect relationships between economy, power, privilege, social identity and determinants, topics will include; industry, consumerism, violence, maternal and child health, food/agriculture, hunger, homelessness, emerging disease, climate, ecosystems, biodiversity. We

will identify and explore solutions for creating personal and community resilience, sustainability and positive health outcomes for people and planet.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Challenge culturally constructed biases that impact specific group identities that lead to stereotyping, microaggressions, implicit bias, systemic oppression and decreased individual and community health outcomes
2. Present scientific research and solutions on the impact of global, economic, social, and agricultural policies on climate change, emerging disease, pollution, ecosystems, biodiversity, and human health
3. Demonstrate how civic awareness, positive actions, beliefs, empathy, social intelligence and community collaborations and planning can lead to sustainable global health outcomes
4. Work within communities to advocate for equitable economic and social policies that advance global health and sustainability outcomes and build climate resilience
5. Describe the interacting dimensions of environmental, physical, mental, emotional, social, intellectual and occupational health and how they can affect global health outcomes
6. Apply scientific reasoning and critical thinking skills when analyzing evidence and non-evidence based global health and sustainability information

HE 275 - Lifetime Health and Fitness

3 Credit(s)

Explore current evidence-based fitness research and its relationship to achieving positive health outcomes. Develop an understanding of how optimal fitness including; cardiorespiratory, strength training, weight management and healthy diet contributes to the prevention of stress and chronic disease.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Explain how the foundations of physical activity relate to optimal health and well-being
2. Describe the principles and socioeconomic challenges of healthy eating and physical activity in achieving your desired health goals
3. Evaluate the relationship between healthy nutritional practices, optimal fitness, healthy sleep habits, and overall well-being in preventing chronic disease
4. Challenge culturally constructed biases toward specific group identities that lead to stereotyping, microaggressions, implicit bias, systemic oppression and decreased individual and community health and fitness outcomes
5. Describe the interacting dimensions of environmental, physical, mental, emotional, social, intellectual and occupational health and how they can affect lifetime health and fitness outcomes
6. Apply scientific reasoning and critical thinking to evaluate the validity of evidence and non-evidence based fitness lifestyle health information

Health Information Management

HIM 107 - Integrated Electronic Health Records

4 Credit(s)

Students will learn to work with simulated Electronic Health Record (EHR) systems with simulated data. Students will apply practice management systems used in a medical office and work with health data. As they work with data using these systems, they will learn about the functionality of this software. Within this environment, they will experience threats to security and appreciate the need for standards, high levels of usability, and sources of errors.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Identify common components of an EHR-PM system and types of EHR applications (E-Mar, POE, PACS, ADT, Lab, DSS, Registries, Billing/ Coding, etc., and acute care, community health, public health, small provider practices, etc.)
2. Describe data flows across health information systems and the implication of standards
3. Identify root causes of EHR-PM data entry induced error (i.e. usability, workflow interference, system error, etc.) and suggest solutions
4. Assess the strengths and weaknesses of specific solutions to health information system problems (to emphasize the reality of solutions and illustrate the frequent domino effect/unintended consequences of changes in an EHR-PM system)

HIM 114 - Introduction to Medical Coding

4 Credit(s)

A coding survey course for those involved in health care delivery, particularly dealing with insurance and/or Medicare and government regulations. Included in this course is the process and practice of ICD-10- CM diagnosis coding as well as CPT procedure coding.

Prerequisite: HP 100

Prerequisite/Corequisite: HP 100 and (HP 150 or BI 231) with grade of C or better, or work experience

Learning Outcomes

1. Understand the purpose of code sets and their relationship to processing medical insurance claims and obtaining reimbursement.
2. Understand coding principles and guidelines.
3. Interpret basic coding rules and apply them when choosing a code for diagnosis and treatment.
4. Accurately assign diagnosis and CPT codes to the highest level of specificity with a 70% accuracy, or higher.
5. Accurately assign evaluation and management, outpatient surgical procedure, laboratory, radiology and medicine coding with a 70 % accuracy, or higher.

HIM 120 - Introduction to Health Information Management

3 Credit(s)

Survey class to introduce the student to the historical development of health information management. Focuses on the work and responsibilities of health information professionals and their relationship with other health care providers, content and structure of patient records; quantitative and qualitative analyses of the documentation of patient care; storage methods; and retrieving patient data elements will be explored.

Learning Outcomes

Upon successful completion of this course, the student will:

1. Summarize the purposes served by the medical record
2. Develop an understanding of the role of the Health Information Management department in a health care facility.
3. Describe the skills, knowledge, and abilities of health information professional
4. Differentiate the content of forms in the paper and electronic medical record
5. Evaluate the trend toward computer-based patient records and its effect on the HIM professional
6. Examine storage and retrieval of patient data records

HIM 154 - Introduction to Disease Processes

4 Credit(s)

This course provides students with a basic understanding of factors that contribute to the occurrence of various diseases and how those diseases may be treated by clinical professionals. Upon successful completion of this course, students will have achieved the goal of being able to recognize the signs and symptoms of diseases and their common treatments. This course includes a pharmacy component.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Define the basic terminology of the disease process
2. Explain the concepts of inflammation, immunity, allergy and neoplasia
3. Describe the most commonly occurring diseases of our society and of each body system
4. Describe the mechanisms of hereditary disease, environmental factors involved in disease and diseases caused by deficiencies or excesses of nutrition
5. Understand key diseases of each system of the human body
6. Discuss the general effects of stress and aging on the human body
7. Be successful in researching a current topic regarding a specific disease and its disease process
8. Understand how to and be successful in participating in a group project (via WKI) concerning a specific disease and its disease process.

HIM 160 - Healthcare Insurance and Billing

4 Credit(s)

This is a hands-on course interactive course where students will learn how medical insurance plays an important role in the financial well-being of every health care business. This course is designed to emphasize the revenue cycle-ten steps that clearly identify all the components needed to successfully manage the

medical insurance claims process. The cycle shows how administrative medical professionals "follow the money". This course covers both outpatient physician and inpatient/outpatient hospital situations.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Identify a new versus established patient, obtain patient demographic information, insurance verification, and authorizations and collect time-of-service payments
2. Understand and explain the importance of accurate documentation when working with electronic health records
3. Describe the different types of medical insurance, their characteristics and eligibility requirements
4. Determine Coordination of Benefits for patients with more than one insurance plan
5. Code diagnoses using the basic steps and principles of the ICD-10-CM coding system
6. Code procedures/services using the basic steps and principles of the CPT/HCPCS coding system
7. Complete HIPAA-compliant health care claims for Medicare, Medicaid, and TRICARE/CHAMPVA; Workers' Compensation; and private payers, including BlueCross and BlueShield Plans, commercial carriers, and managed care organizations
8. Understand and complete the hospital billing cycle following the guidelines previously learned
9. Discuss HIPAA/HITECH, legal, and ethical considerations with emphasis on confidentiality, protected health information and fraud related to insurance
10. Discuss the processing of payers' remittance advices (RAs) and patient billing/collections

HIM 183 - Introduction to Health Information Systems

4 Credit(s)

This course examines the foundations of health information technology used by health care entities. Students will explore the use of information systems and their application through literature review and hands-on experiences. Topics include clinical and administrative applications used in the role of HIM professionals.

Learning Outcomes

Upon successful completion of this course, the student will:

1. Identify the major types of information system applications used in healthcare organizations, such as coding, administrative, voice-recognition, decision support, human relations, EHR, PHR
2. Recognize emerging trends affecting the development of healthcare information systems
3. Identify policies which need to be developed and adopted to ensure security of health records
4. Identify the types of information needed by different healthcare decision makers
5. Identify the greatest threats to the security of health information
6. Discuss the current status of the electronic health record development and implementation

HIM 200 - Healthcare Statistics

3 Credit(s)

Healthcare statistics presents the collection and integration of given data. Computations of various formulas are used in analyzing and converting this data to useful information. Students learn appropriate methods to analyze, interpret, and present various types of data applicable to a variety of health care needs, i.e. patient care, management of a facility, and mandatory reporting requirements.

Prerequisite: MTH 052 or higher, or test into MTH 060 or higher

Learning Outcomes

Upon successful completion of this course the student will:

1. Define statistics, define where statistics in healthcare originates, and identify the users of healthcare statistics
2. Explain basic statistical mathematic functions: fractions, decimals, quotients, proportion, rate, and percentage
3. Perform basic mathematical functions accurately
4. Define, differentiate, and apply the terms related to hospital censuses, service days, and admission and discharge
5. Define and compute: hospital and department census, inpatient service days, and admission and discharge

6. Define and differentiate among the terms inpatient bed count, bed complement total bed count days, newborn bassinet count, bed count days, and newborn bassinet count days
7. Compute the bed occupancy percentage by date and by service days
8. Calculate the direct and indirect bed turnover rate
9. Define and calculate: length of stay variables
10. Define and calculate death rates for various populations
11. Define and calculate operations and procedures
12. Define and calculate cancer mortality
13. Define and calculate hospital autopsies and their rates
14. Define and calculate various morbidity rates
15. Describe the uses of statistics computed within the HIM department regarding unit cost, productivity, and staffing levels
16. Differentiate between operational and capital budgets
17. Generate and verify computerized statistical reports for accuracy
18. Define categorical data: nominal, ordinal, interval, and ratio
19. Differentiate between discrete data and continuous data
20. Describe and differentiate between various tools used for presenting data
21. Create tables and graphs to display statistical information
22. Define the basics of healthcare research
23. Describe various types of research designs
24. Understand the privacy considerations in clinical and biomedical research
25. Understand and describe data interpretation issues

HIM 210 - Leadership for Health Information Management

4 Credit(s)

This course will provide practical instruction in management principles from a health information (HIM) perspective. HIM Managers are found in all healthcare settings: acute-care, outpatient, long-term care, rehabilitation, healthcare insurance, and even as HER vendors. The principles introduced will provide a foundation and path for sound management practice and decision making as well as the human resources department plays in today's healthcare management environment.

Prerequisite: MTH 052 or higher, and complete the following courses: HP 110, HIM 107, HIM 183, and (CIS 101 or CS 120), with a grade of C or better or instructor consent

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Describe the impact of theories of management on health information functions
2. Examine the various theories of management demonstrated within healthcare organizations
3. Distinguish between the various theories of leadership exhibited within healthcare organizations
4. Explain the management functions of planning, organizing, leading, and controlling in relation to a health information management (HIM) manager's job responsibilities
5. Identify the levels of management most exhibited in healthcare organizations
6. Discuss the use of dashboards and scorecards as controlling tools for managers
7. Discuss ethical concerns in regard to HIM management
8. Examine how cultural diversity impacts the health information management (HIM) workforce
9. Identify the roles and responsibilities of team membership
10. Explain how workplace morale contributes to the sustainability of the HIM department
11. Assess the impact of changing workforce demographics on the HIM profession
12. Explain fiscal responsibilities in relation to budgeting
13. Compute a budget variance
14. Explain the purpose of a budget committee
15. Create a budget using an Excel spreadsheet
16. Define organizational development in terms of strategic planning
17. Explain the techniques used to promote change Identify the stages associated with the adoption of innovation or change
18. Contrast the impact of differing conflict management styles required for managing resistance and conflict associated within change
19. Discuss federal equal employment opportunity legislation
20. Discuss key components of the Americans with Disabilities Act
21. Evaluate legal practices in relation to interviewing and hiring practices

22. Explain the key components of dismissal for cause and due process
23. Explain job analysis
24. Differentiate between health information management (HIM) job analyses, job descriptions, and job specifications
25. Adapt health information management policies and procedures to support job tasks outlined in job descriptions
26. Evaluate the role of human resources in the recruitment of health information management (HIM) professionals
27. Discuss employee selection in relation to job hiring
28. Describe the role performance appraisals play in the oversight of health information management (HIM) functions
29. Conduct effective performance appraisal interviews
30. Explain the benefits and components of a new employee orientation program
31. Compare current methods in training and development that apply to health information management (HIM)
32. Justify additional training needs based on emerging roles in HIM
33. Develop training opportunities for consumer engagement activities
34. Evaluate health information management's (HIM's) organizational model based on influence and structure
35. Discuss how to leverage HIM's role within the healthcare community
36. Examine the American Health Information Management Association's (AHIMA's) professional competencies to maintain relevancy as an HIM professional

HIM 222 - Reimbursement Methodologies

4 Credit(s)

This course will provide the student with a comprehensive overview of billing for facility services using the ICD-10-CM, CPT and HCPCS codes to complete UB-04 claim forms. The course will familiarize the student with health records and how documentation translates to the basics of medical coding, billing, insurance, and proper reimbursement. The course also discusses the various reimbursement methodologies affecting facilities and provides an introduction to coding classification systems and the payer and healthcare system in the United States.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Apply knowledge of the methods of healthcare reimbursement
2. Understand Clinical Coding and Coding Compliance
3. Describe Voluntary Healthcare Insurance Plans
4. Understand the key concepts of Government-Sponsored Healthcare Programs
5. Understand the key concepts of Managed Care Plans
6. Understand the Medicare-Medicaid Prospective Payment System for Inpatients
7. Differentiate between the non-acute Medicare/Medicaid reimbursement systems for ambulatory, other, and prospective payment systems for Post-Acute Care
8. Demonstrate the important role of Revenue Cycle Management and Value-Based Purchasing in healthcare reimbursement

HIM 230 - Quality Improvement in Healthcare

4 Credit(s)

This course investigates the components of quality and performance improvement, and explores the functions of risk management, utilization management, and case management. Quality performance improvement components, along with regulatory requirements will be investigated. Students will learn skills in data analysis, performance improvement tools, and data presentation.

Learning Outcomes

Upon completion of this course, students will be able to:

1. Define a performance improvement model
2. Identify improvement opportunities based on performance measurement
3. Use teamwork in performance improvement
4. Aggregate and analyze performance improvement data
5. Communicate performance improvement activities and recommendations
6. Measure customer satisfaction
7. Identify the continuum of care
8. Implement the provision of care, treatment, and services to prevent and control infectious disease
8. Describe ways to decrease risk exposure
9. Identify the components of a safe medication management system
10. Apply tools to manage the environment of care developing staff and human resources
11. Organize resources for performance improvement
12. Research and navigate the accreditation, certification, or licensure process
13. Identify aspects of change management and the human side of change

14. Explain common research methodologies and why they are used in healthcare
15. Summarize project management methodologies
16. Explain common research methodologies and why they are used in healthcare
17. Apply information and data strategies in support of information governance initiatives
18. Utilize enterprise assets in support of organizational strategies
19. Use teamwork in performance improvement

HIM 241 - Health Information Management Applications 1

4 Credit(s)

This course examines the foundations of health information technology used in the collection and management of clinical information. Topics covered: the function, content, and structure of the health record. Data sets and healthcare information requirements and standards will also be covered.

Prerequisite: HIM 114 and HIM 120 and HIM 183 and HIM 222 with a grade of C or better, or instructor consent. Recommended: HP 220

Learning Outcomes

Upon successful completion of this course, the student will:

1. Summarize the development of the health information management profession from its beginnings to the present
2. Evaluate contrast the paper-based, hybrid, and electronic methods in fulfilling the functions of the health record
3. Describe the attributes of security, access, flexibility, connectivity and efficiency in fulfilling the functions of the health records
4. Perform qualitative and quantitative analysis of records in various healthcare records, i.e. acute care and ambulatory records
5. Define how various primary and secondary data sets are used in healthcare settings
6. Describe the purpose, use, and documentation, requirements for customary reports, observations, orders, notes, authorizations, and consents included in a health record
7. Identify types of numbering, filing, indexing and registry sets are used in health care settings
8. Explain the purpose and elements of a personal health record
9. Explore emerging activities at the federal, state, and regional level towards a national electronic health record
10. Describe the purposes of registries and indexes, such as the master patient Index, disease index, and operational index
11. Identify the role of the health information management professional in data stewardship of primary and secondary data

HIM 242 - Health Information Management Applications 2

4 Credit(s)

This course covers the history and use of clinical vocabularies, reimbursement methodologies, principles and supervisory management; including resources management responsibilities, such as job position descriptions, performance/practice standards, and policies and procedures. Students will study topics on Human Resources, RHIOs, PHRs, and medical identity theft.

Prerequisite: HIM 241 with a grade of C or higher, or instructor consent.

Learning Outcomes

Upon successful completion of this course, the student will:

1. Demonstrate a clear understanding the history and use of clinical vocabularies
2. Demonstrate an understanding of, and be able to distinguish among the various reimbursement methodologies.
3. Explore and discuss the fundamentals of work planning and Staffing.
4. Explore the organization principles and organizational tools
5. Understand the structure and importance of Regional Health Information Exchanges, Personal Health Records (PHR)
6. Describe medical identity theft and theft prevention methods

HIM 260 - Medical Record Auditing

4 Credit(s)

This is a hands-on, interactive course where students will learn how medical record auditing plays an important role in the financial well-being of every healthcare business. This course is designed to emphasize the principles of medical record documentation and chart auditing. This course will detail the processes of documentation, coding guidelines and regulatory information as it pertains to auditing. This course covers both outpatient physician and inpatient / outpatient hospital records.

Prerequisite: HIM 270 and HIM 273 with a grade of C or better.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Identify a new versus established patient, obtain patient demographic information, insurance verification, and authorizations and collect time-of-service payments
2. Understand and explain the importance of accurate documentation when working with electronic health records
3. Describe the different types of medical insurance, their characteristics and eligibility requirements
4. Determine Coordination of Benefits for patients with more than one insurance plan
5. Code diagnoses using the basic steps and principles of the ICD-10-CM coding system
6. Code procedures/services using the basic steps and principles of the CPT/HCPCS coding system
7. Complete HIPAA-compliant health care claims for Medicare, Medicaid, and TRICARE/CHAMPVA; Workers' Compensation; and private payers, including BlueCross and BlueShield Plans, commercial carriers, and managed care organizations
8. Understand and complete the hospital billing cycle following the guidelines previously learned
9. Discuss HIPAA/HITECH, legal, and ethical considerations with emphasis on confidentiality, protected health information and fraud related to insurance
10. Discuss the processing of payers' remittance advices (RAs) and patient billing/collections

HIM 270 - ICD-10 Coding

5 Credit(s)

Students gain a working knowledge of ICD-10-CM diagnosis coding with exposure in abstracting and identifying correct diagnosis codes per guidelines and utilize Encoder programs.

Prerequisite: HIM 114 with a grade of C or better.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Summarize the characteristics of the ICD-10-CM classification system
2. Describe the format of the Tabular List of Diseases and Injuries
3. Identify and define the chapters & sub chapters or blocks used in ICD-10-CM
4. Express what the main terms, subterms, carryover lines, nonessential modifiers, and eponyms are that are used in ICD-10-CM
5. Recognize the contents of the Appendices of ICD-10-CM
6. Explain the format of the Alphabetic Index to Diseases in ICD-10-CM
7. Demonstrate an understanding of the use of the cross-reference terms and instructional notes used in ICD-10-CM
8. Describe the rules for multiple coding
9. Explain how connecting words are used in the Alphabetic Index
10. Apply the symbols, punctuation, and abbreviations used to code in ICD-10-CM
11. List the basic steps in ICD-10-CM coding
12. Assign diagnosis codes using the Alphabetic Index and Tabular List

HIM 271 - ICD-10-PCS Coding

5 Credit(s)

Students gain a working knowledge of ICD-10-PCS coding. This course concentrates on inpatient procedure coding and is designed to provide thorough training in building codes in ICD-10-PCS. A comprehensive review of the structure and conventions of the system is included, as well as an in-depth discussion of the anatomy and code structure and will utilize Encoder programs.

Prerequisite: HIM 114 for a grade of C or better

Learning Outcomes

1. Describe the background and rationale for the development of ICD-10-PCS.
2. List the seven characters that compose an ICD-10-PCS code.
3. Identify the 17 sections of ICD-10-PCS and distinguish between the Medical and Surgical, Medical and Surgical Related, and Ancillary Sections.
4. Describe the body system and body part characters and how the two character values relate to each other.
5. Define the meaning of the root operation and the nine subgroupings of the root operations in the Medical and Surgical section.
6. List and define the seven different approach values used in ICD-10-PCS.
7. Describe the device character and the criteria for including a value for devices.

8. Discuss the use of the Device Key, Device Aggregation Table, and Substance Key found in the ICD-10-PCS system.
9. Discuss the use of the qualifier as the last character in the ICD-10-PCS code.
10. List the steps in code building in ICD-10-PCS, both in using a coding book and the CMS file method.
11. Build ICD-10-PCS codes for given procedures using a coding book and the CMS file method.

HIM 273 - CPT and HCPCS Coding

5 Credit(s)

Students gain a working knowledge of CPT and HCPCS coding with exposure in abstracting and identifying correct outpatient procedure (C PT) codes and HCPCS codes per guidelines and will utilize encoder programs.

Prerequisite: (HP 100 and HP 150 and HP 152) or (BI 231 and BI 233) with a grade of C or better

Learning Outcomes

Upon successful course completion, the student will:

1. Identify organizations that address the content of the physician office health record
2. Understand the definitions pertaining to evaluation and management (E/M) services
3. Apply knowledge of E/M services guidelines to locate the correct code for the level of service provided during the encounter or visit
4. Describe the contents and structure of all sections of the CPT code book
5. Identify the modifiers that are most commonly used for CPT coding
6. Differentiate between modifiers for physician use and modifiers for hospital outpatient use
7. Append modifiers appropriately
8. Interpret health record documentation to identify codable diagnostic and procedure statements resulting from a physician service
9. Define what HCPCS codes are, including their format and publishing body
10. Demonstrate how to assign HCPCS codes while observing the coding hierarchy
11. Identify ways to obtain regulatory agency and payer-specific guidelines for use in the coding and reimbursement process
12. Describe the process flow of claims generation and processing from patient visit to final payment
13. Recognize potential coding quality issues as reported on payer remittance reports (for example, explanation of benefits)
14. Identify ways to obtain or create tools to clarify conflicting, ambiguous, or missing health record documentation and/or billing information from the physician
15. Explain the concept of compliance

HIM 275 - CPT Coding 2

4 Credit(s)

This is Part 2 of a 2 Part series. This course continues to explore the CPT coding system with the remaining body systems, along with HCPC coding which is essential to healthcare reimbursement and data collection schemes. Additional coding and billing systems may be explored, such as DRG, as applicable.

Prerequisite: HIM 273

Learning Outcomes

Upon successful completion of this course, the student will:

1. Appropriately Interpret information contained in the Current Procedural Terminology (CPT) and Health Care Procedural Codes (HCPCS) guidelines with application to Ambulatory Payment Classifications (APCs).
2. Apply appropriate modifiers to CPT/HCPCS codes.
3. Analyze surgical, laboratory, therapeutic and other hospital source documents to determine services that can be coded.
4. Define terminology, describe components, and assign codes to integumentary and musculoskeletal systems.
5. Define terminology, describe components, and assign codes to respiratory and cardiovascular systems.
6. Define terminology, describe components, and assign codes to digestive system.
7. Define terminology, describe components, and assign codes to urinary/male reproductive system.
8. Define terminology, describe components, and assign codes to female reproductive system.

Health Professions

HP 100 - Medical Terminology 1

3 Credit(s)

A programmed learning course covering basic medical terminology, derivation, pronunciation, and meaning. This course presents a study of basic medical terminology. Prefixes, suffixes, word roots, combining forms, special endings, plural forms, and abbreviations are included in the content.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Spell, pronounce, define, abbreviate, identify word parts, and correctly use medical and anatomical terms
2. Identify the correct medical term to complete a statement
3. Construct both the plural and singular forms of a medical term and construct correctly spelled medical and anatomical terms given word parts and definitions
4. Write the correct medical abbreviation given a list of phrases, names, or labels, and write the correct phrase, name, or label given a medical abbreviation
5. Correctly pronounce and explain the meaning of medical and anatomical terms given an oral exam

HP 105 - EHR for the Provider Office

3 Credit(s)

This course provides students the opportunity to establish proficiency in creating patient charts, complete electronic progress notes for a variety of practice patients, and will complete electronic history forms, lab requisition forms, electronic prescriptions, electronic telephone notes, proof of appointment letters and electronic forms, and enter coding and billing information. This course utilizes an applied approach using simulation EHR software.

Learning Outcomes

Upon successful completion of this course the student will:

1. Demonstrate proficiency creating patient medical records with accurate demographic and financial information.
2. Demonstrate the process that will avoid duplication of medical records.
3. Demonstrate proficiency in posting charges, entering medical codes; prepare billing statements, post payments from payers and insurers, post overpayments, and process refunds.
4. Demonstrate proficiency in clinical documentation in the patient EHR
5. Demonstrate accurate administrative documentation in the patient record.
6. Demonstrate understanding accessing patient information in the EHR based on a need to know, within scope of practice for various office staff and care providers.
7. Demonstrate understanding of issues of confidentiality in relation to the medical record.
8. Demonstrate proficiency of evaluating a medical record for completeness in regards to regulatory requirement and medical necessity.
9. Demonstrate proficiency in completing insurance claim forms
10. Demonstrate proficiency in obtaining preauthorization, including documentation.
11. Demonstrate proficiency of verifying eligibility for managed care services and complete appropriate documentation in EHR.
12. Define and explain the purpose of keeping a personal health record (PHR), identify the steps of creating a PHR, and identify steps in maintaining a PHR.
13. Demonstrate proficiency in accessing and printing appropriate patient education documents

HP 110 - Health Office Procedures

3 Credit(s)

Principles and practical application of administrative duties in a healthcare office. Topics covered include management of both paper and electronic medical records, ROI (release of information), appointment scheduling, professional verbal and written communication skills, legal and ethics in healthcare, banking and revenue cycle basics, HIPAA privacy and OSHA safety requirements, and some entry-level management skills.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Identify their individual work style (i.e., where they like to focus their attention, the way they like to take in information and the way they like to make decisions), and the strengths and weaknesses of that style. Describe the strengths of other work styles and how to work cooperatively with workers with different styles
2. Describe and utilize appropriate communication skills Describe and utilize including non-verbal communication and active listening. Describe barriers to

communication and how to overcome skills including non-verbal them. Describe appropriate and inappropriate forms of communication, whether spoken, written, or electronic, with respect to employment and professionalism

3. Describe the characteristics of an effective work team and how to be a capable team member

4. Understand the issues involved in working with people from different cultural backgrounds how to work effectively in a diverse workplace

5. Describe and demonstrate the rules of "principled negotiation" and conflict resolution. Understand what sexual harassment is, how to prevent it, and how to deal with it if it occurs. Recognize, describe and demonstrate assertive behavior and describe how it differs from passive and aggressive behavior

6. Describe and demonstrate customer satisfaction skills for "internal" and "external" customers

7. Identify character traits associated with being an ethical personal and use systemic methods for making ethical decisions and behaving ethically in the workplace

8. Describe and give examples of how to effectively manage workplace stress and anger

HP 150 - Human Body Systems 1

3 Credit(s)

This course introduces the fundamental concepts of the anatomy and physiology, beginning with the structural organization of the body, followed by the structures and functions of the integumentary, skeletal, muscular, cardiovascular, and the nervous system. Part 1 of a 2 part series.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Describe information related to anatomy and physiology utilizing appropriate terminology
2. Explain homeostatic mechanisms and discuss how they apply to human body systems
3. Classify anatomical reference points and human motion using cardinal planes and directional terms
4. Define and describe the levels of structural organization of the human body, including the basic characteristics of cells and metabolism, tissues, and the organ systems
5. Explain the physiological functions of the integumentary, skeletal, muscular, cardiovascular, and the nervous system using appropriate anatomical terms

HP 152 - Human Body Systems 2

3 Credit(s)

As a continuation of HP 150, this course introduces the fundamental structures and functions of the lymphatic, endocrine, respiratory, urinary, digestive, and reproductive systems, and the general and special senses. A basic introduction to microbes and immunology is also included. Part 2 of a 2 part series.

Prerequisite: HP 150

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Describe information related to anatomy and physiology utilizing appropriate terminology
2. Explain the physiological functions of the lymphatic, endocrine, respiratory, urinary, digestive, and reproductive system using appropriate anatomical terms
3. Identify the dietary sources of the essential nutrients — carbohydrates, proteins, fats, vitamins, and minerals — and the major functions of the macronutrients in the body
4. Explain how microbes and immunology play a role in health and disease
5. Describe the structure and function of the general and special senses

HP 153 - Introduction to Pharmacology

3 Credit(s)

An overview of pharmacology for the health professions student with a framework to understand medications and their administration. Part I is a review of pharmacologic principles, introducing students to the subject of drugs, their sources, and their uses. Part II examines drug classifications through descriptions and characteristics of common drugs, their purposes, side effects, precautions or contraindications, side effects, and interactions. Patient education is highlighted for each classification of drug.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. State the main medical uses for drugs.
2. List the main sources for drugs, giving examples from each source.

3. Explain the significance of the Controlled Substances Act of 1970.
4. List the controlled substance schedules and cite examples of drugs listed in each.
5. Identify available drug references including the Physician's Desk Reference (PDR), and be able to use them effectively.
6. Classify drugs according to preparation and therapeutic action.
7. Utilize accepted drug abbreviations and systems of measurements.
8. Describe and demonstrate universal and standard precautions.
9. Explain how to prevent needle stick injuries in health care settings.
10. State the actions, uses, contraindications, adverse reactions, dosages, and routes for various classes of drugs.
11. List the safety issues that apply when administering medications.
12. Identify US consumer safety precautions and drug relations.
13. Define key terms.

HP 220 - Legal and Ethical Aspects of Healthcare

3 Credit(s)

An overview of the United States legal system. A study of the principles of law and ethics as applied to the healthcare field with particular reference to all phases of medical information management and medical assisting.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Discuss historical perspectives of health care
2. Explain sources of law that effect health care –including licensing, regulation and accreditation
3. Analyze Tort Law/theories of negligence and tort reform
4. Describe criminal aspects of health care law
5. Examine contract and antitrust issues – including managed health care
6. Critique medical staff organizations
7. Discuss medicine and the law
8. Analyze corporate liability and liability by departments and health care professionals and malpractice insurance
9. Discuss information management and health care records
10. List patient rights and responsibilities /patient safety and zero tolerance
11. Recognize the importance of legal reporting requirements
12. Analyze health care ethics
13. Synthesize policy relating to employment law and labor relations in the health care industry

History

HST 101 - Western Civilization: Ancient Mediterranean

4 Credit(s)

A survey of the historical development of religious and secular value systems, scientific theories, social structures, economies, and political thought and institutions of the Western world from the earliest recorded city-states through the early Renaissance. The course will focus on the diverse societies and cultures of the Near East, Egypt, Greeks, Jews, Romans, and Christians and on the influence of Germanic and Islamic societies in the wake of the fall of Rome. The course will also examine the historical relationship between the events and ideas of this earlier period and our modern world. May be taken out of sequence.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior. Identify and consider important concepts, movements, and themes to understand peoples of ancient and medieval societies from 5000 BCE to late Medieval/early Renaissance
2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live. Analyze how diverse peoples in the Ancient Near East, northern Africa and Europe created religious systems, social structures and political institutions. Note the variety of interactions between various groups and individuals and how they dealt with change and issues common to all
3. Understand the role of individuals and institutions within the context of society. It will demonstrate when and where the concept of the individual came about and who first looked at how the individual functioned within a society. Look at function of institutions in society, how they are unique or not, and how they influence behavior of individuals or are used by individuals. Ask the question of why individualism was not a concept for many in ancient societies, how that changed, and why this is even an outcome for a Social Science class

4. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry. Demonstrate a functional appreciation of various interpretations of history and how they came to be. Identify different schools of thought and the many "lenses" used to look back and study history
5. Utilize appropriate information literacy skills in written and oral communication. Students evaluate and use relevant evidence to illustrate and support questions and perspectives about the past as well as conclusions they draw from them
6. Understand the diversity of human experience and thought, individually and collectively. Identify and consider the universals and the diverseness in human experience over time. Demonstrate knowledge of geographical time and place and how that changes. Be familiar with processes by which individuals and peoples change over time

HST 102 - Western Civilization: Making of Modern Europe

4 Credit(s)

A survey of the historical development of religious and secular value systems, scientific theories, social structures, economies, and political thought and institutions of the Western world from Italian Renaissance through the French Revolution. Topics include Europe's colonization of the western hemisphere, the Reformation era, the Enlightenment and Scientific Revolution, and the early Industrial Revolution. The course will also provide students with an overview of diverse peoples, nationalities, and cultures in the context of changing social, political, and economic conditions and values. It will further examine the influence of the events and ideas of this period on the modern world. May be taken out of sequence.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior. Identify and consider important concepts, movements, and themes to understand peoples in Europe and non-Europeans they came into contact with from the late medieval, Renaissance, approx. 1350, through the French Revolution, 1815. Analyze creation of, and changes in religious and other belief systems and scientific ideas
2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live. Analyze how humanists of the Renaissance believed in human progress at the personal and collective level. Look at how Europeans regarded the diverse peoples, individually and in groups, they came into contact with during the age of discovery. Note the variety of interactions between various groups and individuals and how they dealt with change and issues common to all
3. Understand the role of individuals and institutions within the context of society. Look at function of institutions in society, how they are unique or not, and how they influence behavior of individuals or are used by individuals. Ask the question of how and why individualism came to be acknowledged, glorified, and manifest in various ways during the Renaissance and later. Compare the concept of individualism to then and now, how it has changed, and why this is even an outcome for a Social Science class
4. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry. Demonstrate a functional appreciation of various interpretations of history and how they came to be. Identify different schools of thought and the many "lenses" used to look back and study history. Synthesize some main themes of western societies and look at their influence in the modern world
5. Utilize appropriate information literacy skills in written and oral communication. Students evaluate and use relevant evidence to illustrate and support questions and perspectives about the past as well as conclusions they draw from them
6. Understand the diversity of human experience and thought, individually and collectively. Identify and consider the universals and the diverseness in human experience over time. Demonstrate knowledge of geographical time and place and how that changes. Be familiar with processes by which individuals and peoples change over time
7. Apply knowledge and skills to contemporary problems and issues. Identify correlations/analogies between the past and our own time. Consider issues common to all eras and human experience

HST 103 - Western Civilization: Europe and the World

4 Credit(s)

A survey of the historical development of the Western world from approximately 1800 to the late twentieth century that provides students with an overview of diverse peoples, nationalities, and cultures in the context of changing social, political, and economic conditions and values. The concepts, events, and people covered will guide our understanding of the present world. Topics include industrialization and labor; social movements; mid-19th- century political revolutions; imperialism; ideologies and politics of the 19th and 20th centuries; the world wars and decolonization; the Cold War, and popular culture. May be taken out of sequence.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior. Identify and consider important concepts, movements, and themes to understand peoples of the western world and their relationship with Africa and Asia beginning approximately in 1800 to the late 20th century
2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live. Analyze how peoples in Europe and America are creating the modern industrial society and various economic and political systems that bring them into contact/conflict with peoples in the Americas, the Middle East, Africa and Asia. Note the variety of interactions between various groups and individuals and how they dealt with change and issues common to all by developing new political and social ideologies
3. Understand the role of individuals and institutions within the context of society. It will demonstrate the concept of the individual in the western world, why, and how it is unique to the west. Look at function of institutions and new ideologies in society, how they are unique or not, and how they influence behavior of individuals or are used by individuals. Ask the question of why individualism is not a concept for many non-western societies which ask the question why this is even an outcome for a Social Science class
4. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry. Demonstrate a functional appreciation of various interpretations of history and how they came to be. Identify different schools of thought and the many "lenses" used to look back and study history
5. Utilize appropriate information literacy skills in written and oral communication. Students evaluate and use relevant evidence to illustrate and support questions and perspectives about the past as well as conclusions they draw from them.
6. Understand the diversity of human experience and thought, individually and collectively. Identify and consider the universals and the diverseness in human experience over time. Demonstrate knowledge of geographical time and place and how that changes. Be familiar with processes by which individuals and peoples change over time
7. Apply knowledge and skills to contemporary problems and issues. Identify correlations/analogies between the past and our own time. Consider issues common to all eras and human experience

HST 104 - World History

4 Credit(s)

World History is the story of peoples on a global stage. This course will look at the origin and diffusion of civilizations in the ancient world including Asia, Africa, Middle East and Mediterranean, Europe and the Americas. Themes and topics will include world religions, early empires, communication, interaction and exchange. These survey courses will use the global approach, which focuses on the big picture and looks at the convergence of peoples across the earth's surface into an integrated world system begun in early times and intensified after the rise of capitalism in the early modern era. All of the courses will consider the connections of select topics and concepts to the shaping of our present world. May be taken out of sequence.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior. Identify and consider important concepts, movements, and themes to understand peoples of ancient and medieval societies from 5000 BCE to late Medieval times.
2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live. Analyze how diverse

peoples in the Ancient Near East, Africa, Asia, the Mediterranean, Europe, and the Americas created religious systems, social structures and political institutions. Note the variety of interactions between various groups and individuals on the global stage and how they dealt with change and issues common to all.

3. Understand the role of individuals and institutions within the context of society. It will demonstrate when and where the concept of the individual came about and who first looked at how the individual functioned within a society. Look at function of institutions in society, how they are unique or not, and how they influence behavior of individuals or are used by individuals. Ask the question of why individualism was not a concept for many in ancient societies, how that changed, and why this is even an outcome for a Social Science class.
4. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry. Demonstrate a functional appreciation of various interpretations of history and how they came to be. Identify different schools of thought and the many "lenses" used to look back and study history.
5. Utilize appropriate information literacy skills in written and oral communication. Students evaluate and use relevant evidence to illustrate and support questions and perspectives about the past as well as conclusions they draw from them.
6. Understand the diversity of human experience and thought, individually and collectively. Identify and consider the universals and the diverseness in human experience over time. Demonstrate knowledge of geographical time and place and how that changes. Be familiar with processes by which individuals and peoples change over time.
7. Apply knowledge and skills to contemporary problems and issues. Identify correlations/analogies between the past and our own time. Consider issues common to all eras and human experience

HST 105 - World History

4 Credit(s)

A survey of diverse peoples using the theme of "movement" to highlight cultural contact during the emergence of new world patterns beginning in approximately 1400 to 1815: It will include topics of exploration and expansion, state building, religions and their impact on culture, war, politics, selected individuals, global trade and consequences. May be taken out of sequence.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior. Identify and consider important concepts, movements, and themes to understand peoples of the pre-modern and early modern world. Global approach used to understand world religions, ideologies, empire building, colonization, exchanges of commodities, ideas and peoples.
2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live. Analyze how diverse peoples in the Ancient Near East, Africa, Asia, the Mediterranean, Europe, and the Americas created religious systems, social structures and political institutions. Note the variety of interactions between various groups and individuals on the global stage and how they dealt with change and issues common to all.
3. Understand the role of individuals and institutions within the context of society. It will demonstrate how the concept of the individual and individualism of certain societies and how it functions. Look at function of institutions in society, how they are unique or not, and how they influence behavior of individuals or are used by individuals. Ask the question of why individualism was not a concept for many societies, how that changed, and why this is even an outcome for a Social Science class.
4. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry. Demonstrate a functional appreciation of various interpretations of history and how they came to be. Identify different schools of thought and the many "lenses" used to look back and study history.
5. Utilize appropriate information literacy skills in written and oral communication. Students evaluate and use relevant evidence to illustrate and support questions and perspectives about the past as well as conclusions they draw from them.
6. Understand the diversity of human experience and thought, individually and collectively. Identify and consider the universals and the diverseness in

human experience over time. Demonstrate knowledge of geographical time and place and how that changes. Be familiar with processes by which individuals and peoples change over time.

7. Apply knowledge and skills to contemporary problems and issues. Identify correlations/analogies between the past and our own time. Consider issues common to all eras and human experience.

HST 106 - World History

4 Credit(s)

A survey of the modern patterns of world history from approximately 1800 to late 20th-century including topics of industrialization and nationalism, mass society, imperialism, Communism, war and revolution, the Cold War, nation-building in Latin America, Africa and the Middle East. Select individuals and events will be examined in historical context to guide understanding of present thought and conditions in our "global village". May be taken out of sequence.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior. Identify and consider important concepts, patterns, themes in the modern global world 1750- to late 20th century. Includes, industrialization, nationalism, mass society, imperialism, Communism, war and revolution, the Cold War, nation-building in Latin America, Africa Asia and the Middle East. Consider the role of religion, culture and environment in those processes.
 2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live. Analyze how diverse peoples around the globe in the modern world created/adapted religious systems, social structures and political institutions to adapt to historical changes. Note the variety of interactions between various groups and individuals on the global stage during those processes and how they dealt with change and issues common to all.
 3. Understand the role of individuals and institutions within the context of society. Continue considering how the concept of the individual and individualism is defined and characteristic of some societies. Look at function of institutions in society, how they are unique or not, and how they influence behavior of individuals or are used by individuals. Ask the question of why individualism is not a concept for many societies, is that changing, and why this is even an outcome for a Social Science class.
 4. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry. Demonstrate a functional appreciation of various interpretations of history and how they came to be. Identify different schools of thought and the many "lenses" used to look back and study history.
 5. Utilize appropriate information literacy skills in written and oral communication. Students evaluate and use relevant evidence to illustrate and support questions and perspectives about the past as well as conclusions they draw from them.
 6. Understand the diversity of human experience and thought, individually and collectively. Identify and consider the universals and the diverseness in human experience over time. Demonstrate knowledge of geographical time and place and how that changes. Be familiar with processes by which individuals and peoples change over time.
 7. Apply knowledge and skills to contemporary problems and issues. Identify correlations/analogies between the past and our own time. Consider issues common to all eras and human experience
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HST 201 - History of the United States

4 Credit(s)

Survey of United States history focusing on the creation and development of the country socially, economically, politically, and culturally. Native America, European colonization, colonial development, origins of slavery, Revolution, early Republic. May be taken out of sequence.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior. Understand European exploration and settlement of North America; Native American responses; origins of racism & slavery; the implications of religious diversity; the effects of the Declaration of Independence, the Revolution & Constitution on American peoples; the early Republic & nationalism
2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live. Understand the diversity

of peoples in the Americas before and after exploration and colonization.

- Develop a greater awareness and understanding of contemporary developments such as human rights & civil rights relative to the past
3. Understand the role of individuals and institutions within the context of society. Demonstrate the communitarian nature of early American societies; understand the ideas of the Enlightenment such as the concept of "individualism;" focus attention on the experiences of various Americans, famous and non-famous; examine the formation of social groups
 4. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry, and philosophical points of view. Reading, writing, and discussion of primary sources; learn comparative history and the interpretative nature of history.
 5. Utilize appropriate information literacy skills in written and oral communication. Learn basic historical terms; learn the tools of historical investigation – how to ask historical questions; learn how to access information for research; develop ability to formulate a problem statement and to argue critically
 6. Understand the diversity of human experience and thought, individually and collectively Learn about individuals and social groups focusing on class, race, ethnicity, and gender
 7. Apply knowledge and skills to contemporary problems and issues. Focus on connection between the past and the present; understand responsibilities of citizenship
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HST 202 - History of the United States

4 Credit(s)

Survey of United States history focusing on the development of the country socially, economically, politically, and culturally. Jacksonian era, expansion, commercial and industrial revolution, slavery, Civil War, Reconstruction, Gilded Age, Populism.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior. Identify and consider important concepts, movements, and themes which shaped the lives of those living within the United States during the 19th Century, including topics such as the Jacksonian era, territorial expansion, market revolution, slavery, Civil War, Reconstruction, Gilded Age, Populism.
2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live.
3. Analyze how diverse groups affected the formation of the American character in terms of Constitutional theories, religious beliefs, social structures, and political institutions. Focus on human interactions, including both unifying principles and outright conflicts that have resulted in continuity and/or change.
4. Understand the role of individuals and institutions within the context of society. The course will examine the influential power exerted on the development of the early American republic by individuals, Constitutional principles, and both socio-cultural and political-economic institutions. This can include biographical history as well as national historical developments, where appropriate.
5. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry. Demonstrate a functional appreciation of the various interpretations of history, assessing both the development and evaluation of each view. Identify different schools of historical thought. Develop the ability to critically analyze the information presented throughout the course, including their sources, citations, and philosophical points of view.
6. Utilize appropriate information literacy skills in written and oral communication. Students will: learn basic historical terms and relevant, era-specific vocabulary; be exposed to the tools of historical investigation, such as how to ask relevant questions; learn how to access information for research; develop the ability to formulate a problem statement and to argue logically and critically
7. Understand the diversity of human experience and thought, individually and collectively Course will include elements of the traditional, revised, and newly emerging narratives that comprise a more accurate history of the United States in the 19th Century.
8. Apply knowledge and skills to contemporary problems and issues. Identify causation, correlations, analogies, and potential lessons between the

historical past and contemporary times. Consider issues common to all eras and the human experience

HST 203 - History of the United States

4 Credit(s)

Survey of United States history focusing on the creation and development of the country socially, economically, politically, and culturally. Imperialism, Progressivism, the 1920s, Depression and New Deal, World Wars and Cold War, 1960s, 1970s and recent developments. May be taken out of sequence.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior. Identify and consider important concepts, movements, and themes which shaped the lives of those living within the United States during the 20th Century, including topics such as the Imperialism, Progressivism, modernity, the 1920s, Depression and New Deal, World Wars and Cold War, 1960s, 1970s and recent developments
2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live.
3. Analyze how diverse groups affected the formation of the American character in terms of Constitutional theories, religious beliefs, social structures, and political institutions. Focus on human interactions, including both unifying principles and outright conflicts that have resulted in continuity and/or change.
4. Understand the role of individuals and institutions within the context of society. Course will examine the influential power exerted on the development of the United States in the 20th Century by individuals, Constitutional principles, and both socio-cultural and political-economic institutions. This can include biographical history as well as national historical developments, where appropriate.
5. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry. Demonstrate a functional appreciation of the various interpretations of history, assessing both the development and evaluation of each view. Identify different schools of historical thought. Develop the ability to critically analyze the information presented throughout the course, including their sources, citations, and philosophical points of view.
6. Utilize appropriate information literacy skills in written and oral communication. Students will: learn basic historical terms and relevant, era-specific vocabulary; be exposed to the tools of historical investigation, such as how to ask relevant questions; learn how to access information for research; develop ability to formulate a problem statement and to argue logically and critically
7. Understand the diversity of human experience and thought, individually and collectively Course will include elements of the traditional, revised, and newly emerging narratives that comprise a more accurate history of the United States in the 20th Century.
8. Apply knowledge and skills to contemporary problems and issues. Identify causation, correlations, analogies, and potential lessons between the historical past and contemporary times. Consider issues common to all eras and the human experience.

HST 266 - US Women's History

4 Credit(s)

This course explores the distinctive experiences of women in the United States from its earliest period to current time. The course will follow a chronological framework with a focus on themes and topics such as Native American women, women and witchcraft, slavery, women's rights movement, women and work, women and war, the 'feminine mystique,' and personal politics. The coursework will also include implications of race, class, and ethnic differences among women over time.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior. Understand the distinctive experiences of women in the United States from indigenous women to current women.
2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live. Gain knowledge of the complex issues of race, ethnicity, gender and class from an historical perspective; learn the impact of those issues on women in society over time.

3. Understand the role of individuals and institutions within the context of society. Students will gain insights into the cultural, racial, ethnic and economic complexities and the diversity of women's lives historically.
4. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry. Reading, writing, and discussion of primary sources; learn comparative history and the interpretative nature of history; gain understanding of the relationships of power.
5. Utilize appropriate information literacy skills in written and oral communication. Learn basic historical terms; learn the tools of historical investigation- how to ask historical questions; learn how to access information for research; develop ability to formulate a problem statement and to argue critically.
6. Understand the diversity of human experience and thought, individually and collectively. Learn about individuals and social groups focusing on class, race, ethnicity, and gender
7. Apply knowledge and skills to contemporary problems and issues. Focus on connection between the past and the present; understand responsibilities of citizenship.

Honors

Note: Students cannot receive credit for both the Honors and non-Honors versions of a course.

ARH 209_H - History of Japanese Art-Honors

3 Credit(s)

A historical survey of the visual arts of Japan from the prehistoric era to the present day including selected works of pottery, woodblock prints, sculpture, and architecture. This honors class delves deeper into course topics and requires a high level of student motivation; the pace may be faster than non-honors courses. See lanecc.edu/honors for information. Students cannot receive credit for both ARH 209 and ARH 209_H.

Prerequisite: Suggested placement into WR 115 or above (college-level reading and writing skills).

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Identify and demonstrate an understanding of the technical procedures and creator's role in art throughout the history of cultural production
2. Demonstrate and effectively communicate an understanding of the impact of religious, philosophical, and political conditions on cultural production and communities
3. Interpret and apply their understanding of the use and meaning of symbols and iconography throughout history to current issues, culture or history
4. Compose written or visual material to effectively communicate knowledge and demonstrate comprehension of art historical periods, styles, terminology, iconography, theory and artworks

ART 115_H - Basic Design: Fundamentals-Honors

3 Credit(s)

Emphasis on fundamental visual elements, concepts, and theory as related to drawing, painting, photography, graphic design and other 2D media. Emphasis on visual elements and principles in 2D media and processes. Students will create and analyze projects that demonstrate critical and creative thinking and knowledge of 2D Design theory and practice. Students will participate in critiques, discussions and presentations of the historical and contemporary context of design. A foundation course for students interested in visual arts, graphic design and multimedia design fields. This honors class delves deeper into course topics and requires a high level of student motivation; the pace may be faster than non-honors courses. See lanecc.edu/honors for information. Students cannot receive credit for both ART 115_H and ART 115.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Create and analyze design projects that demonstrate knowledge of 2D theory and practice
2. Identify and demonstrate use of 2D design elements, including line, shape, form, value, edge, positive-negative space
3. Identify and demonstrate use of 2D organizational elements, including unity, tension, rhythm, balance, depth, pattern, variety and emphasis
4. Identify and demonstrate 2D design concepts as they pertain to 2D disciplines, including painting, photography, drawing, graphic design and printmaking
5. Demonstrate individual visual, aesthetic, conceptual choices in 2D design

projects that relate to specific art historical and/or contemporary art theory

6. Demonstrate the ability to analyze 2D art images, verbally, or in writing, related to specific 2D design media, theory and vocabulary

7. Display specific elements of creative thinking, including Persistence, Risk-taking, Reflection and Exploration

BI 101_H - General Biology-Honors

4 Credit(s)

BI 101 topics: atoms, molecules, cellular processes, genetics, protein synthesis, photosynthesis, respiration. Lab included. This honors class delves deeper into course topics and requires a high level of student motivation; the pace may be faster than non-honors courses. See lanecc.edu/honors for information. Students cannot receive credit for both BI 101_H and BI 101. Students may use only one BI 101 to meet requirements for any Lane degree, regardless of letter option.

Prerequisite: WR 121 readiness (score of at least 96 on the sentence-skills placement test) recommended.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply scientific inquiry to biological sciences concepts
2. Describe the steps involved in scientific inquiry and distinguish between a hypothesis and a theory
3. Develop a vocabulary of appropriate terminology to effectively communicate information concepts in cell biology
4. Evaluate and critique scientific information from various sources (journals, magazines, newspapers, television, and the internet) for scientific reliability and validity
5. Model the flow of information: the flow from genetic information (DNA) to phenotype (physical traits)
6. Describe the role of evolution at a cellular and molecular level
7. Apply concepts of Biology and Chemistry to understand metabolic pathways
8. Relate scientific technologies to their impact on various areas of society such as medicine, industry, environment, and agriculture
9. Diagram a cell and explain the role of the major components of the cell, including how the components work together for cell function and replication
10. Describe patterns of inheritance based on meiosis
11. Identify sources of genetic variation based on mutation, meiotic processes and sexual reproduction

COMM 111_H - Fundamentals of Public Speaking-Honors

4 Credit(s)

This course is designed to help students learn to express their ideas to an audience with confidence and clarity. The aim of this course is to teach students to speak in a public setting by preparing presentations on a number of diverse topics for use on a variety of occasions. This course provides students with opportunities to learn how to analyze an audience and tailor their messages to that audience. In addition, students will learn to become critical listeners by analyzing and critiquing other students' presentations. This honors class delves deeper into course topics and requires a high level of student motivation; the pace may be faster than non-honors courses. See lanecc.edu/honors for information. Students cannot receive credit for both COMM 111_H and COMM 111.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Prepare speeches that include appropriate topics, clear and specific organization, and compelling evidence and support
2. Deliver speeches using ethical, appropriate and effective delivery techniques
3. Identify the characteristics of, and create different types of speeches, for example informative and persuasive
4. Develop and analyze arguments using ethos (credibility), pathos (emotion), and logos (logic)
5. Demonstrate skills in finding credible sources, audience analysis, critical listening, and evaluating speeches

CRWR 242_H - Creative Writing: Poetry-Honors

4 Credit(s)

This is a course in writing poetry. The course will help students: Learn the elements of poetry and read poems by well-known poets. Develop ability in poetic composition. Read and write poems effectively. Receive constructive criticism of their writing. Learn to be balanced and confident in their critical evaluations of their peers and gain a better understanding of themselves and others as writers. This honors class delves deeper into course topics and requires a high level of student motivation; the pace may be faster than non-honors courses. See

www.lanecc.edu/honors for information. Students cannot receive credit for both CRWR 242_H and CRWR 242.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Know how to write their own poetry, and have a portfolio of 5-10 revised, original poems
2. Know how to draft, read critically, and revise their poetry
3. Know how to recognize and utilize a variety of elements of poetry, including sound, rhythm, tone, and figures of speech
4. Have received critiques of their poetry from the instructor and their classmates
5. Learn to read effectively and to help edit the poetry of their classmates
6. Have been introduced to a wide variety of published poetry, including a variety of themes, forms, and styles
7. Learn to use and evaluate traditional and non-traditional forms

ENG 104_H - Introduction to Literature: Fiction-Honors

4 Credit(s)

This course will present to the student a wide range of fiction from various time periods and cultures. Course work will involve students in critical analysis, basic literary terminology, and concepts which will enhance appreciation of fiction. The course may include the short story and the novel or novella. This honors class delves deeper into course topics and requires a high level of student motivation; the pace may be faster than non-honors courses. See lanecc.edu/honors for information. Students cannot receive credit for both ENG 104 and ENG 104_H.

Prerequisite: None; recommended to have college-level reading and writing skills (a passing grade in WR 115 or placement into WR 121).

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Distinguish between connotation and denotation and demonstrate how the connotative language helps shape major points of a literary text (poem, story, play)
2. Demonstrate an ability to read works of fiction at both a literal and figurative level
3. Articulate familiarity with social and political perspectives on fiction, such as those that consider race, gender, ethnicity, nationality and sexual orientation
4. Identify and define significant literary devices (such as plot, character, setting, theme and point of view) for the purpose of meaningful interpretation
5. Demonstrate an appreciation of the power of fiction to create worlds
6. Demonstrate an awareness of one's self and others as members of a culture
7. Demonstrate and ability to differentiate in works of fiction among significant elements (e.g., between short stories by the same or different authors, between short story and novel or film, between works of fiction from different literary-historical periods)
8. Interpret works of fiction within their contexts (e.g., literary/historical periods and influences, cultural and biographical background of authors, authorial intentions and critical reception)
9. Formulate and apply criteria that are appropriate to the context and genre of the literary text when evaluating works of fiction
10. Distinguish between unsupported responses and literary-critical judgment when evaluating works of fiction
11. Develop initial responses into literary-critical judgment
12. Use effective oral and written communication-- including at least one formal essay -- to express literary interpretations and evaluations-- developed independently and/or collaboratively
13. Produce a significant amount of interpretive and analytical writing using well-selected textual and other evidence
14. Utilize MLA, APA, or equivalent standard style sheet documentation when needed, and edited Standard American English
15. Demonstrate ability to use interpretive frameworks to investigate contextual meanings of literature

ENG 105_H - Introduction to Literature: Drama-Honors

4 Credit(s)

This course is a reading, writing, and discussion course that features critical analysis and appreciation of a wide variety of world plays beginning with the classical Greek period and ending with works of today. This honors class delves deeper into course topics and requires a high level of student motivation; the pace may be faster than non-honors courses. See www.lanecc.edu/honors for information. Students cannot receive credit for both ENG 105_H and ENG 105.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Distinguish between connotation and denotation and demonstrate how the connotative language helps shape major points of a literary text (poem, story, play)
2. Demonstrate an ability to read works of drama at both literal and figurative level
3. Use effective oral and written communication including at least one formal essay to express literary interpretations and evaluations developed independently and/or collaboratively
4. Produce a significant amount of interpretive and analytical writing using well-selected textual and other evidence
5. Utilize MLA, APA, or equivalent standard style sheet documentation when needed, and edited Standard American English
6. Gain the ability to respond emotionally and intellectually to plays as a reader and a real-life viewer
7. Be willing to extend consciousness and deepen insight in the possibilities of what it means to be a human being
8. Understand a wide range of dramatic terms such as catharsis, dramatic irony, theater of the absurd, etc.
9. Better appreciate the development of character and theme as well as the multiplicity of meaning that lies below the surface plot
10. Demonstrate ability to use interpretive frameworks to investigate contextual meanings of literature

ENG 106_H - Introduction to Literature: Poetry-Honors

4 Credit(s)

This course will present to the student a wide range of poetry from various time periods and cultures. Course work will involve students in the consideration of poetic technique and expression. Theme, structure, and style will be emphasized, as well as the elements of poetry. At the discretion of the Instructor, students may also be required to participate in creative writing assignments to gain insight into the nature of poetry. This honors class delves deeper into course topics and requires a high level of student motivation; the pace may be faster than non-honors courses. See lanecc.edu/honors for information. Students cannot receive credit for both ENG 106_H and ENG 106.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Distinguish between connotation and denotation and demonstrate how the connotative language helps shape major points of a literary text (poem, story, play)
2. Demonstrate an ability to read works of poetry at both a literal and figurative level
3. Use effective oral and written communication including at least one formal essay to express literary interpretations and evaluations developed independently and/or collaboratively
4. Produce a significant amount of interpretive and analytical writing using well-selected textual and other evidence
5. Utilize MLA, APA, or equivalent standard style sheet documentation when needed, and edited Standard American English
6. Develop and be able to demonstrate a scholarly relationship to poetry, in both its intellectual and emotional aspects
7. Understand and be able to apply poetic terms and devices such as voices, diction, word choice imagery, symbols, rhythm and meter, figures of speech
8. Develop and be able to demonstrate an awareness of the ways in which many types of human experience relate to poetry
9. Develop and be able to demonstrate an awareness of many recognized poets from diverse backgrounds
10. Demonstrate ability to use interpretive frameworks to investigate contextual meanings of literature

ENSC 182_H - Atmospheric Environment and Climate Change-Honors

4 Credit(s)

Causes, consequences, geologic history and science of climate change and atmosphere. Topics and labs include weather, sun-Earth cycles, air pollution, ozone layer, greenhouse effect, ocean/atmosphere/ice systems, climate models and data, predictions, feedbacks, tipping points, carbon sequestration, energy options. Lab included. This honors class delves deeper into course topics and requires a high level of student motivation; the pace may be faster than non-honors courses. See lanecc.edu/honors for information. Students cannot receive credit for both ENSC 182_H and ENSC 182.

Prerequisite: Recommended: G 102 or GEOG 141

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Evaluate and perform scientific procedures and methods. Make detailed observations, gathering and assessing information, formulating hypotheses, and thinking creatively about weather, atmospheric chemistry and climate variables and climate changes over time
2. Interpret and compare some basic characteristics of the atmosphere and processes that influence weather and climate
3. Conduct experiments and make measurements of atmospheric variables such as temperature, pressure, relative humidity and calculate or estimate other atmospheric variables from these
4. Summarize weather hazards and compare their effects on advantaged and disadvantaged human populations
5. Describe the natural and "enhanced" greenhouse effect and its causes
6. Predict potential consequences of global warming to ecologic, hydrologic, marine, meteorological, and human systems
7. Analyze the complexity of the Earth's climate system including the carbon cycle and explain many of its feedbacks and the possibility of tipping points
8. Describe and analyze the varied evidence for past climate change and assess the reliability and range of error of these data
9. Evaluate her or his contribution to climate change and personal role in mitigating that contribution
10. Apply analysis of methods of climate stabilization wedges, carbon sequestration and carbon accounting to assess the potential for easing the collective effect of humans on the climate
11. Explain the chemistry of the ozone layer and its depletion and analyze the possible consequences of increasing ozone-destroying gases in the atmosphere
12. Distinguish the greenhouse effect and ozone depletion from each other, and elucidate their commonalities

ENSC 183_H - Aquatic Environment-Honors

4 Credit(s)

Students learn about freshwater and marine systems including their biology, geology, chemistry, circulation, climate and interactions with humans. Topics and labs include aquatic biodiversity, streams, water pollution, ocean currents, fisheries, sustaining aquatic systems and water resources. Take ENSC 181-183 in any order. Lab included. This honors class delves deeper into course topics and requires a high level of student motivation; the pace may be faster than non-honors courses. See lanecc.edu/honors for information. Students cannot receive credit for both ENSC 183_H and ENSC 183.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Evaluate and perform scientific procedures and methods
2. Demonstrate and describe key chemical and physical properties of water
3. Evaluate major environmental threats to, mitigation of and adaptation to change in freshwater and marine systems related to pollution, fisheries collapse, water shortages, and/or effects of climate change. Explore social justice issues associated with these problems
4. Research the global importance of aquatic biodiversity and ongoing conservation efforts
5. Develop hypotheses and collect field data to study physical parameters including dissolved oxygen, nutrients, pH, and turbidity, and to study life in aquatic ecosystems
6. Demonstrate critical thinking skills by gathering and assessing information about current environmental issues and sustainability related to aquatic ecosystems and water resources conservation

HON 280_H - Co-op Ed: International Work Experience-Honors

1-12 Credit(s)

This is a structured program for honors students to do an international work experience through LCC and IE3 Global Internships. Living and working in another country, students gain career and intercultural skills essential in a global society. Application and other details are on the web at: ie3global.org This honors class delves deeper into course topics and requires a high level of student motivation; the pace may be faster than non-honors courses. See lanecc.edu/honors for information.

Prerequisite: Instructor approval; WR 121-readiness recommended

Learning Outcomes

Upon successful completion of this course, the student will:

1. Articulate their understanding of social issues and responsibilities, multiculturalism, organizational culture, leadership styles, and sustainability in both home country

2. Observe, investigate, document and reflect upon social issues and responsibilities, multiculturalism, organizational culture, leadership styles and sustainability in an international setting
3. Demonstrate foundational workplace competencies such as reliability, responsibility, following instructions, team-work, communication skills and taking appropriate initiative
4. Articulate similarities and differences between home country and host country
- 5- Describe how the international work experience has influenced them personally and professionally

PS 297_H - Environmental Politics-Honors

4 Credit(s)

This course focuses on current environmental problems, alternative frameworks for understanding these problems, and appropriate political responses. Among the problems covered are overpopulation, economic globalization, ozone depletion, the greenhouse effect, bio-colonization, and the depletion of renewable and non-renewable resources. Alternative frameworks considered include the philosophical visions of Deep Ecology and Gaia. These frameworks are used to investigate possible ways to create sustainable economic, political and social systems. Finally, the course focuses on grass roots politics, including groups and social movements actively seeking to promote environmental and social justice. This honors class delves deeper into course topics and requires a high level of student motivation; the pace may be faster than non-honors courses. See lanecc.edu/honors for information. Students cannot receive credit for both PS 297 and PS 297_H.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior. Apply the analytical frameworks of Deep Ecology, GAIA Theory, Traditional Ecological Knowledge, and Eco-feminism to issues of carrying capacity, ecological foot print, economic systems, eco-system resilience, public policy, and political activism
2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live. The concepts and information provided are designed to be relevant to the everyday lives of students. This helps students understand and locate themselves in the social world of which they are a part. This understanding, in turn helps them to develop compassion and understanding for others and the environment
3. Understand the role of individuals and institutions within the context of society. Students learn that they are integrally interconnected to the society and environment in which they live through the study of philosophical concepts like Gaia Theory; contemporary sciences of ecology and Chaos theory; economic systems that contrast growth based paradigms with Steady State Economics; specific environmental alternatives that recognize this interdependence are studied including local currency, community supported agriculture, Permaculture, bioregionalism, Transition Towns, and relocalization
4. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry. Students apply the basic concept of carrying capacity and the ecological frameworks of Deep Ecology, Gaia Theory, Traditional Ecological Knowledge, and Eco-feminism to real world practices and problems. This provides students with the tools to empirically and philosophically evaluate the validity and appropriateness of these practices
5. Utilize appropriate information literacy skills in written and oral communication. Students learn the critical thinking skills of 'immanent critique' and 'deconstruction' to determine if information supports a claim and arguments are internally consistent. Students are introduced to library research techniques to locate relevant and reliable information. Students learn the difference between plagiarism and use of sources properly cited in their essay assignments. Students are taught to integrate relevant, appropriately cited information into written assignments in support of the arguments and claims they develop
6. Understand the diversity of human experience and thought, individually and collectively. This class emphasizes the importance of both cultural and ecological diversity. Particular emphasis is placed on the impact of neo-liberal economic policies on indigenous peoples and on the populations in places where structural adjustment policies impact the ability of people to govern themselves to insure their general welfare. Particular emphasis is also

placed on the practices of traditional and contemporary cultures that are ecologically sound

7. Apply knowledge and skills to contemporary problems and issues. Students apply the basic concept of carrying capacity and the ecological frameworks of Deep Ecology, Gaia Theory, Traditional Ecological Knowledge, and Eco-feminism to real world practices and problems. Problems and practices examined include neo-liberal economics, peak oil, climate change, genetic engineering, bio-colonization, nano-technology, and the destruction of indigenous lands. Alternative practices examined include local currency, community supported agriculture, Permaculture, bioregionalism, Transition Towns, and relocalization

PSY 201_H - General Psychology-Honors

4 Credit(s)

Scientific principles of psychology and psychological research; an introduction to statistical methodology, developmental and structural aspects, neurobiology and neurochemistry, and brain anatomy; senses and perceptual processes; states of consciousness. Basic principles and theories of behavior. This honors class delves deeper into course topics and requires a high level of student motivation; the pace may be faster than non-honors courses. See lanecc.edu/honors for information. Students cannot receive credit for both PSY 201 and PSY 201_H.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Identify how differing perspectives of psychology contribute to examining and understanding the complexities of behavior and mental processes in varying contexts and environments
2. Recognize how historical approaches to psychology shaped early development of psychology
3. Identify and evaluate how scientific research methods (including experiments and correlational research) differ from other forms of inquiry and have been applied to studying mental activity, brain processes, and behavior to provide the basis for contemporary psychology
4. Identify and apply how neurobiological processes associated with the brain, behavior, sensation and perception, and consciousness, operate at different levels of analysis to shape how we interface with each other and the real world, and to shape how we understand ourselves
5. Recognize and apply how ongoing processes and the diversity of experiences throughout life shape human development

SOC 204_H - Introduction to Sociology-Honors

4 Credit(s)

Introduction to fundamental concepts in sociology, such as culture, social structure, organizations, socialization, deviance, and stratification, as well as theoretical traditions and research methodology. Development and application of the sociological imagination. This honors class delves deeper into course topics and requires a high level of student motivation; the pace may be faster than non-honors courses. See lanecc.edu/honors for information. Students cannot receive credit for both SOC 204_H and SOC 204.

Learning Outcomes

Upon successful completion of this course, the student will:

1. Define and apply fundamental concepts in sociology
2. Utilize the sociological imagination to recognize connections between individual experiences, social structure and processes, and social change
3. Appreciate the value of social science research methods for understanding social realities
4. Recognize the significance of social differentiation (diversity) and globalization in human group life
5. Identify social forces that contribute to issues of concern in contemporary societies

TA 272_H - Introduction to Theatre-Honors

4 Credit(s)

Introduces students to the art and business of contemporary theatre. Topics include playwriting, theatre history, and contemporary production practices. Emphasis is placed on the value of theatre arts to society and the individual. No performing required. No materials to buy. Includes free attendance at local theatrical productions. This honors class delves deeper into course topics and requires a high level of student motivation; the pace may be faster than non-honors courses. See lanecc.edu/honors for information. Students cannot receive credit for both TA 272 and TA 272_H.

Learning Outcomes

Upon completion of this course, students will be able to:

1. Express an appreciation for the ways current and historic theatre practitioners use/have used the medium as a personal and social means of expression and activism
2. Evaluate the personal, social, and artistic strengths and weaknesses of a theatrical experience utilizing vocabulary specific to the dramatic arts
3. Identify the structural elements of dramatic literature and story
4. Identify elements of performance practices of numerous international theatrical traditions
5. Apply contemporary critical theories to dramatic literature and/or theatrical experiences

WR 121_H - Academic Composition-Honors

4 Credit(s)

This fundamental course for all writing students introduces students to the conventions of academic writing. It emphasizes defining and developing a significant topic and using principles of clear thinking to support an assertive or argumentative thesis. Students will gain an understanding of their subject matter, audience, purpose, and point-of-view, and demonstrate that understanding through the organization and development of their essays. Students will learn how to analyze and evaluate other writers' work to sharpen their critical abilities as readers and writers. The course also introduces students to skills in source analysis, documentation, and beginning research methods. This honors class delves deeper into course topics and requires a high level of student motivation; the pace may be faster than non-honors courses. See lanecc.edu/honors for information. Students cannot receive credit for both WR 121_H and WR 121.

Prerequisite: WR 115 or placement

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. The course also introduces students to skills in source analysis, documentation, and beginning research methods
2. Demonstrate critical thinking and reading skills of situations or challenging college-level texts
 - a. Read actively and rhetorically: engage with complex ideas in order to evaluate and interpret texts
 - b. Evaluate, use, and synthesize sources in support of the thesis, which may include primary and secondary, and found in media-captured, electronic, live and printed forms
 - c. Develop and organize essays using logic, examples, and illustration, and research to support his/her ideas
 - d. Engage in the research process as part of an inquiry process
3. Make appropriate and effective rhetorical choices during all stages of the writing process:
 - a. Adopt an appropriate point of view, which takes into account voice, tone, and ethos
 - b. Choose strategies of development appropriate for the purpose and audience—including narration, cause/effect, description, comparison/contrast, classification, process, and definition (recognizing that effective writing usually involves combinations of these modes")
 - c. Identify audience and a clear purpose; d. Shape a thesis and/or controlling idea (implicit or explicit) that expresses a focused approach to ideas, insights, and/or applications

WR 122_H - Argument, Research and Multimodal Composition-Honors

4 Credit(s)

While continuing the concerns of WR 121, WR 122 focuses on persuasion and argument supported by external research, including the processes of finding and evaluating sources, citing, documenting, and integrating source material into the student's own text. Both subjects—argument and research—are presented in the context of critical reading and the writing. This honors class delves deeper into course topics and requires a high level of student motivation; the pace may be faster than non-honors courses. See lanecc.edu/honors for information. Students cannot receive credit for both WR 122_H and WR 122.

Prerequisite: WR 121 or WR 121_H

Learning Outcomes

Upon successful completion of this course, students should be able to:

1. Engage in and value a respectful and free exchange of ideas
2. Demonstrate effective critical thinking and reading skills of college-level texts
3. Make appropriate and effective rhetorical choices within specific Writing Situations during multiple stages of the writing process, including: invention, drafting, revising, and editing

4. Employ appropriate methods of development and support within their written arguments
5. Engage in an effective research process, demonstrate effective use of quality resources, and accurately and consistently cite sources using appropriate documentation style(s) in accordance with a documentation handbook
6. Effectively employ and critically analyze the accepted conventions and formatting of academic
7. Identify differences in rhetorical strategies and devices in different systems
8. Develop an understanding of why rhetorical systems differ
9. Develop an understanding of the features and uses of Black American rhetoric
10. Examine the social, historical, cultural, economic, and legal framework of rhetorical systems

WR 227_H - Technical Writing-Honors

4 Credit(s)

This transfer course emphasizes forms of writing demanded in the workplace. While addressing issues like evaluation of materials and audiences, sources of information, organization, design, and visual aids, the projects include letters, informal reports, descriptions, instructions, and proposals. This honors class delves deeper into course topics and requires a high level of student motivation; the pace may be faster than non-honors courses. See lanecc.edu/honors for information. Students cannot receive credit for both WR 227_H and WR 227.

Prerequisite: WR 121 or WR 121_H. Recommended: WR 122

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. The course also introduces students to skills in source analysis, documentation, and beginning research methods
2. Demonstrate critical thinking and reading skills of situations or challenging college-level texts
 - a. Read actively and rhetorically: engage with complex ideas in order to evaluate and interpret texts
 - b. Evaluate, use, and synthesize sources in support of the thesis, which may include primary and secondary, and found in media-captured, electronic, live and printed forms
 - c. Develop and organize essays using logic, examples, and illustration, and research to support his/her ideas
 - d. Engage in the research process as part of an inquiry process
3. Make appropriate and effective rhetorical choices during all stages of the writing process
 - a. Adopt an appropriate point of view, which takes into account voice, tone, and ethos
 - b. Choose strategies of development appropriate for the purpose and audience—including narration, cause/effect, description, comparison/contrast, classification, process, and definition (recognizing that effective writing usually involves combinations of these modes")
 - c. Identify audience and a clear purpose
 - d. Shape a thesis and/or controlling idea (implicit or explicit) that expresses a focused approach to ideas, insights, and/or applications

Horticulture

HORT 120 - Gardening and Sustainable Food Systems

4 Credit(s)

This class will focus on experiential learning in the garden on how to grow plants from seed to harvest (or to seed again) particularly those plant varieties that are regionally appropriate. We will develop an understanding of sustainable food systems, including growing edible plants at a variety of scales, methods of sustainable agriculture, and methods to improve regional food security. We will also explore the impacts of industrial agriculture on ecosystems, human rights, and health. Lab included.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Identify the basic parts of a plant, general characteristics of different families of edible plants, and describe the relationship between the plant and the soil (Lab participation, quizzes, written products)
2. Evaluate sustainable agriculture practices to maximize production while balancing improving soil health, managing pests, and water conservation (Lab participation, quizzes, written products)
3. Relate basics of applied ecology in biological and elemental systems to the process of growing food (Lab participation, class discussion, written products)
4. Apply principles of horticulture towards growing edible plants, saving their

- seeds, and building personal/regional food security (lab participation, journaling, written products)
5. Evaluate the role of biodiversity in edible plants, particularly related to climate resilience, indigenous foods, and ecosystem services (written products, journaling, class discussion)
 6. Evaluate the importance of plant-human relationships in context to sustainable food systems, food sovereignty, and impacts of industrial agriculture on human rights and environmental health (quizzes, written products, journaling, class discussion)
 7. Develop personal relationships with the land by creating a plan and taking action to make sustainable change through food production (written reflection, class discussion, journaling, final project)

Human Development and Family Studies

HDFS 226 - Child Development

3 Credit(s)

Study of children's physical, social-emotional, and intellectual development. Topics include, prenatal development and influences, a survey of various child-study approaches, instruction and experience in observing and recording the behavior of young children, study of adult-child differences, value of play, and discipline.

Learning Outcomes

Upon successful completion of this course, the student will:

1. Identify and explain the theories of development (child-study approaches).
2. Describe the development of the embryo and fetus.
3. Describe the factors influencing prenatal development.
4. Explain the effects of the environment on development.
5. Identify the physical, cognitive and social/emotional developmental stages of infancy, toddlerhood, and the early childhood years (birth through six years of age – including how children differ from adults, the value of play, and types of discipline).
6. Apply an understanding of the concepts, principles and terms learned, to the behaviors and activities of the developing child (infant through 6 years of age).
7. Identify the basic physical, cognitive, and social/emotional development of middle childhood and adolescence (seven through 18 years of age).

HDFS 227 - Children Under Stress

3 Credit(s)

This course examines the social, economic, and cultural factors that contribute to a child's experience and their impact on developmental potential. In this course, we look at some of the major issues that keep children from experiencing life more fully. Emphasis will be placed on attachment theory, the development of self-esteem, and trauma-informed care.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Define stress and identify stressors in children's lives.
2. Describe the personal, familial, social, political, and economic conditions or circumstances that place undue stress on growing children.
3. Increase awareness of diversity in child rearing practices, in values, and attitudes toward children.
4. Understand how to create growth-producing environments that meet basic human needs.
5. Have a greater insight into yourself and come to appreciate how it was that you dealt with stress.
6. See the value of stress in the lives of children and adults.
7. Identify resources in the community to use in supporting children and families in stressful situations.

HDFS 228 - Young Children with Special Needs

3 Credit(s)

The development, needs, and behavior of preschool aged children with special needs. General and practical strategies to help integrate children with special needs into childcare programs. An overview of inclusion, along with a focus on specific disabilities is covered, including autism spectrum disorder, speech and language, and attention deficit disorder.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Explain the values and current research on the practice of inclusion and describe what an inclusive program for preschool children looks like.
2. Identify the characteristics of major disabilities.

3. Discuss the ways in which disabilities affect the cognitive, language, social, and motor development of preschool age children.
4. Discuss the federal and state laws affecting young children with disabilities, and the early intervention system in Oregon.
5. Describe teaching techniques for facilitating language and social development in young children in inclusive programs.
6. Be familiar with assessment and screening techniques and ways to identify children with possible special needs in the preschool years.
7. Describe techniques to meet the needs of children with special needs in inclusive preschools including how to teach a variety of developmental levels, and how to adapt environments and curriculums.
8. Discuss teaching techniques for children with challenging behaviors.
9. Understand some of the needs and concerns of parents whose children have special needs and identify ways to form parent-teacher partnerships

Human/Community Services

HS 102 - Psychopharmacology

4 Credit(s)

Students will be introduced to the behavioral, psychological, physical and social effects of psychoactive substances on the individual user as well as the family and society. Students will learn basic pharmacology and about commonly abused drugs. Models of treatment for substance use and disorders will be explored including issues related to diverse cultures, lifestyles, gender and the needs of special populations. This class is accepted by MHACBO to meet certification requirements for alcohol & drug counselors.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Demonstrate knowledge of the basic pharmacology and commonly abused drugs.
2. Build knowledge skills and attitudes to improve personal performance in treating the user.
3. List models of treatment for substance use and disorders.

HS 150 - Personal Effectiveness for Human Service Workers

3 Credit(s)

This course is designed to help students create greater success in college and in their professional lives, while simultaneously building a supportive learning environment for students in the Human Services Program. The course utilizes individual and small group exercises to explore human service careers, and issues relevant to being an effective Human Services professional. Students will learn and practice field-orientated skills in preparation for cooperative education internship and employment, including stress management and burnout prevention.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Examine personal values, beliefs, and motivations and utilize this information to enhance effectiveness across life roles
2. Identify the stages of professional development that occur between the novice and advanced practitioner
3. Engage with various strengths-based strategies, mindfulness practices, and stress management techniques to foster resilience and growth in self and others
4. Articulate strengths and skills in the context of a professional resume and cover letter in preparation for cooperative education internships in the Human Services field
5. Engage with various strengths-based strategies, mindfulness practices, and stress management techniques to foster resilience and growth in self and others

HS 155 - Interviewing Theory and Techniques

3 Credit(s)

Students will be introduced to the theoretical knowledge and interviewing skills required of human service workers in a variety of settings. Students will learn the basic processes used for information gathering, problem solving, and for sharing information. They will learn and practice skills associated with conducting an effective interview. Students will be sensitized to the issues common to interviewing people of differing cultural backgrounds. This class is accepted by MHACBO to meet certification requirements for alcohol and drug counselors.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Define the purpose of interviewing, and discuss the role of the interviewer

2. Evaluate interviews for, and conduct interviews with, effective sequencing, and structure

3. Demonstrate active listening, interviewing and assessment skills

4. Demonstrate problem solving skills and strategies for helping clients change behavior

HS 158 - Trauma: Theory to Practice

2 Credit(s)

This class introduces students to the sources and prevalence of trauma (including physical, cognitive, emotional, social and behavioral responses to traumatic experiences), how trauma impacts individuals who seek assistance from human service organizations. Best practices for both trauma specific and trauma-informed services will be explored.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Demonstrate knowledge of the prevalence, epidemiology, and types of trauma that impact individuals in general, as well as people in human service organizations
2. Identify the consequences of trauma for the individual and society
3. Describe the signs and symptoms indicative of a trauma history
4. Define the important elements in trauma informed and trauma specific services, and trauma informed organizational systems

HS 201 - Introduction to Human Services

3 Credit(s)

Students will be introduced to a wide array of social and personal problems that are addressed by the field of human services. Students will explore the way economics and history shape current social welfare programs and policies. The philosophical foundation of the human service movement as well as career opportunities in the field will be examined. Trends and intervention strategies for a number of service systems will be introduced. The impact of diversity and trauma informed care on service delivery will be explored.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Explain the history and evolution of the human services movement, and apply information to emerging issues in the field
2. Demonstrate a basic understanding of the principles and ethics of the human services worker
3. Identify the various systems and helping roles common to the human services profession
4. Practice basic client support and problem-solving skills used by human services professionals
5. Identify the various systems and helping roles common to the human services profession
6. Utilize theoretical frameworks for conceptualizing how personal and environmental factors including poverty, race, and trauma influence behavior

HS 209 - Crisis Intervention and Prevention

3 Credit(s)

This course will introduce human service to crisis intervention and prevention that emphasizes crisis counseling and non-physical methods for preventing or controlling disruptive behavior before it escalates. Students will be taught effective non-violent intervention for a wide range of crisis situations. Content of this course will provide students with hands-on practical approaches to crisis management.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Define crisis intervention and the stages of crisis development and appropriate responses to each stage
2. List characteristics of people in crisis
3. Identify the potential for violent or disruptive behavior during a crisis
4. List the 5 steps of empathic listening
5. Demonstrate how to reduce tension in a crisis

HS 220 - Prevention 1: Preventing Substance Abuse and Other Social Problems

3 Credit(s)

Students will be introduced to prevention philosophy and program interventions aimed at addressing social problems and reinforcing healthy behavior and lifestyles. Risk factors, protective processes and resiliency factors will be explored. Students will have an opportunity to examine effective prevention programs that address the needs of different cultures and diverse populations.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Describe the risk factors, protective processes and resiliency factors related to prevention strategies.
2. Outline the steps to build a successful prevention program.
3. Demonstrate why and how prevention professionals should be sensitive to other cultures and diverse populations.
4. Describe the relationship between prevention strategies and human development.
5. List local programs and national models of prevention programs.
6. Describe how addiction impacts the body, mind and spirit.
7. Describe the role of media in prevention.
8. Describe evaluation methods used in prevention.
9. List ethical issues and dilemmas faced by prevention practitioners.

HS 221 - Co-occurring Disorders

3 Credit(s)

An introduction to best practices in working with individuals with dual diagnoses and their families. Emphasizes integrated services to individuals with both mental health diagnosis and substance use diagnosis. Supports students to meet entry-level requirements of social service agencies in Oregon. This class is accepted by MHACBO to meet certification requirements for alcohol and drug counselors.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Identify and define the dynamics of co-occurring disorders
2. Understand the efficacy of best practices for integrated treatment
3. Recognize and implement integrated case management strategies
4. Recognize the importance of a comprehensive community support system
5. Have a basic knowledge of the DM-IV-TR as a reference guide with the ability to access pertinent information for assessment purposes
6. Have a basic knowledge of ASAM criteria
7. Have a general knowledge of the services available and needs of specific populations

HS 222 - Best Practices in Human Services: Interventions

4 Credit(s)

An overview of Best Practices currently implemented for substance abuse, mental health, case management and a variety of other challenges facing adults and families will be examined with an emphasis on the impact of environmental/societal factors, gender and multicultural issues.

Learning Outcomes

Students who successfully complete this course will be able to:

1. List the components of Best Practices (BP's) and identify the benefits and challenges they present in the field of human services
2. Demonstrate the ability to locate relevant information about BP's, including the ability to compare interventions and their use in Oregon
3. Demonstrate a basic understanding of the current BP's utilized with numerous issues relevant in the field of human services
4. Identify several local human service agencies and their use of BP's
5. Demonstrate an understanding of the cultural strengths and challenges of implementing BP's

HS 224 - Group Counseling Skills

3 Credit(s)

Introduction to describing, selecting, and appropriately using strategies from accepted and culturally appropriate models for group counseling with clients with a variety of disorders including substance abuse. This class is accepted by MHACBO to meet certification requirements for alcohol and drug counselors.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Be knowledgeable about the potential benefits and drawbacks of group interventions; group ethics; group member selection; developmental stages of groups; types of groups.
2. Develop group facilitation skills; identify group process issues; develop techniques for creating a safe atmosphere; promote active group involvement, develop ability to identify group processes (therapy vs. here-and-now); and give/receive feedback.
3. Identify processes that limit or hinder the group and processes that stimulate and encourage the group.
4. Participate in the in-class groups as an opportunity to increase self-awareness; integrate practice and readings; practice facilitator behaviors; identify skills and weaknesses; provide and receive feedback from members

HS 226 - Ethics and Law

3 Credit(s)

Introduction to the established professional codes of ethics that define the professional context within which the addiction counselor and human services provider works. Students will become knowledgeable about federal and state laws and regulations that apply in the field of substance abuse treatment and other health and human services. This class is accepted by MHACBO to meet certification requirements for alcohol and drug counselors.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Have an introduction to the field of ethics and law in human services.
2. Have an introduction to professional and ethical behavior in human services.
3. Learn about ethical dilemmas and legal requirements which might present themselves in the field of human services.
4. Learn a framework for making sound ethical decisions.
5. Examine personal values, attitudes and behaviors and how they may impact professional work in the field of human services.

HS 228 - HIV/AIDS and other Infectious Diseases: Risk Assessment and Intervention

2 Credit(s)

Introduces the epidemiology of HIV/AIDS, and other infectious diseases, including sexually transmitted diseases that frequently infect people who use drugs or who are chemically dependent. Students will examine treatment options and prevention strategies. The legal and policy issues that impact infected individuals as well as the larger community will be explored. This class is accepted by MHACBO to meet certification requirements for alcohol and drug counselors.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Define HIV/AIDS, Hepatitis C, Tuberculosis, and Herpes at risk behavior.
2. Thoroughly understand routes of HIV/AIDS, Hepatitis C, Tuberculosis and Herpes transmission.
3. Understand the various epidemiological factors that promote HIV/AIDS, Hepatitis C, Tuberculosis and Herpes transmission to different populations.
4. Recognize the deleterious effects of addressing HIV/AIDS, Hepatitis C, Tuberculosis and Herpes only in at risk populations.
5. Understand the HIV, Hepatitis C and Tuberculosis testing procedure and its limitations.
6. Comprehend the effects of the HIV/AIDS Hepatitis C and Tuberculosis on a global scale.
7. Examine the government's treatment of HIV/AIDS, Hepatitis C and Tuberculosis in the United States.
8. Understand chemical use and dependency and how it relates to high risk behavior and HIV/AIDS, Hepatitis C Tuberculosis and Herpes infection.
9. Examine basic HIV/AIDS, Hepatitis C, Tuberculosis, and Herpes education methods.
10. Understand the experiences of both HIV/AIDS seropositive individuals and persons who have engaged in high-risk behavior.
11. Discern the effectiveness of counseling the directives on at risk individual cases.
12. Understand the ethical and legal issues involved in HIV/AIDS screening, testing and counseling

HS 229 - Grief and Loss Across Life Span

3 Credit(s)

Students will explore the emotional, cultural, developmental, spiritual and behavioral factors that shape an individual's reaction to loss, including the reactions of helpers who are working with people experiencing personal loss and grief. Material will address losses of individuals, and their significant others, when confronted by chronic disability, illness, or other life-altering events associated with aging as well as death. This course utilizes lecture, discussion, and group exercises to respond compassionately and help individuals develop emotional resilience to loss.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Identify how contemporary familial, social, economic, and cultural realities shape attitudes toward grief and loss
2. Recognize processes to identify, interpret, and reconstruct loss narratives
3. Formulate methods that assist grievers to construct loss strategies and reinterpret loss narratives.

4. Develop a "tool box" of resources for oneself and individuals who anticipate or who are experiencing a loss
5. Develop an understanding of personal issues that will support or impede the ability to support individuals who are grieving or anticipating a loss

HS 231 - Advanced Interviewing and Counseling

3 Credit(s)

This class will provide an introduction to the theory and principles of motivational interviewing. Motivational interviewing is a client-centered approach to helping Individuals make behavioral changes by encouraging them to explore and resolve their ambivalence about engaging in a change process. Students will learn the theoretical basis of this evidence based practice. Students will learn about stages of change and strategies for intervening effectively at each stage of the change process.

Prerequisite: HS 155**Learning Outcomes**

Upon successful completion of this course, the student should be able to:

1. Describe the Stage Model of the Process of Change.
2. Identify theoretical models of motivation and brief interventions.
3. Describe the key elements of the motivational interviewing style and how it differs from other approaches.
4. List the therapeutic tasks at each stage of change and demonstrate skills for each stage.
5. List and demonstrate the five general principles of motivational interviewing.
6. Describe and demonstrate the structuring of the motivational interview.
7. Demonstrate dealing effectively with client resistance.
8. Demonstrate an attitude of respect, warmth, non-judgment, interest, and optimism that change is possible

HS 232 - Cognitive-Behavioral Strategies

3 Credit(s)

This course will introduce students to the theory and methods of cognitive-behavioral approaches to counseling. These approaches rest upon the premise that psychological distress and maladaptive behavior is the result of faulty thinking. Cognitive-behavioral approaches are based on a psycho-educational model and focus on changing cognitions in order to change feelings and behavior.

Prerequisite: HS 155**Learning Outcomes**

Upon successful completion of this course, the student should be able to:

1. Describe and differentiate between three approaches to Cognitive-Behavioral Therapy (CBT) including how behavior changes as a result of CBT interventions.
2. Demonstrate an understanding of mood disorders, anxiety disorders, maladaptive thinking and other issues from a CBT perspective.
3. Demonstrate CBT techniques.
4. Demonstrate the structure of CBT interviews: first, second, and subsequent sessions.
5. Demonstrate how to assess clients in identifying automatic thoughts and emotions.
6. Demonstrate how to assess and evaluate cognitive distortions.
7. Demonstrate how to modify belief systems.
8. List effective programs of CBT that address the needs of special populations.
9. Demonstrate the effective use of homework in CBT.
10. Demonstrate an attitude of respect, non-judgment, interest, and optimism.
11. Demonstrate a knowledge of sensitivity to culture, ethnicity, class, disability, and gender differences.
12. The success of this class and the richness of our experience depend on the input and feedback of each person.

HS 265 - Casework Interviewing

3 Credit(s)

Students will learn the theoretical knowledge of a solution focus approach to develop skills needed to work in human services organizations. Students will learn the goals and methods of effective casework including interviewing skills, case management and treatment planning. This theoretical approach emphasizes clients' strengths and goals.

Prerequisite: HS 155**Learning Outcomes**

Upon successful completion of this course, the student should be able to:

1. List the stages of solution building.
2. Demonstrate interview skills from a solution focused perspective.

- List the characteristics of a well-formed goal.
- Demonstrate a solution-focused interview with involuntary clients.
- Demonstrate ways to identify client strengths.
- Demonstrate how to set goals, monitor, reassess, provide feedback and disengage from clients.
- Define the role of case manager

HS 266 - Case Management

3 Credit(s)

Students will be introduced to the theory and practice of case management. Methods of delivering accessible, integrated, coordinated, and accountable case management services will be presented. Students will learn how to maintain professional records, including documenting assessments, treatment plans, chart notes and other relevant agency records. Cross-cultural issues to designing and delivering case management services will be explored. This class is accepted by MHACBO to meet certification requirements, including ASAM assessment, for alcohol and drug counselors.

Prerequisite: HS 155

Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Define case management.
- Explore case management from its roots to its present day form.
- Understand the different models of case management.
- Know the role of service coordination and how it works.
- Discuss working in and with agencies as case managers.
- Review and discuss ethical and legal issues of case management.
- Continue to explore professional development issues and burnout.
- Understand the role and practice of service coordination today

HS 267 - Cultural Competence in Human Services

3 Credit(s)

This course will focus on developing the cultural competency of beginning human services practitioner. Major ethnic and cultural groups will be studied, as well as cultural philosophies, assumptions and patterns, and their impact on identity and mental health. This class is accepted by MHACBO to meet certification requirements for alcohol and drug counselors.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Define racism (individual, institutional, cultural) and prejudice, describe the personal and social dynamics involved in each, and define the terms "culture" and "multicultural".
- Define the skills involved in cultural competence of individual and human service organizations.
- Describe the dynamics of stress, identity conflict, acculturation, and internalized oppression as they apply to people of color.
- Discuss bias and cultural differences in the delivery of mental health and drug and alcohol services to people of color.
- Discuss problems related to counseling cross-culturally.
- Describe ways in which counselors can adapt mainstream, white counseling practices to work with communities of color.
- Demonstrate an understanding of the unique general counseling and chemical dependency counseling issues with respect to African Americans, LGBTQ (Lesbian, Gay, Bisexual, Transgendered, Queer), Asian Americans, Native Americans and Hispanic Americans.
- Describe personal biases, past experiences and potential areas of conflict related to counseling cross-culturally.
- Identify the student's own group memberships and identities and describe how these might influence his/her work with clients who are similar and different

Humanities

HUM 100 - Humanities Through the Arts

4 Credit(s)

The Humanities through the Arts offers an exploratory approach to the humanities, focusing on the special role of the arts. Examining the relation of the humanities to values, objects and events important to people, is central to this course. A major goal of the course is to provide a means of studying values as revealed in the arts, all the while keeping in mind the important question "What Is Art?". This course is intended to provide the necessary tools for students to think critically when exploring the arts and the other humanities. Online mediums are used to enrich and enhance the topics covered.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Apply analytical skills to social phenomena in order to understand human behavior. Identify myriad links between the understanding and appreciation of art and the understanding and appreciation of ourselves. Trace historical as well as contemporary social trends and movements through the observation and analysis of parallel artistic movements in painting, sculpture, music, architecture, drama, and more recently, film
- Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live. Develop a greater understanding of the historical influences of political, cultural and scientific values upon art and how these values can help us understand ourselves as well as the social contexts in which we reside. Learn how to apply this understanding to our own perceptions of the world around us
- Understand the role of individuals and institutions within the context of society. Course will examine the local, regional, and worldwide impacts of artistic expression. The deliberate and unintended influences of legitimate" social institutions upon our definition and acceptance of art will be considered as well as the sometimes surprising and powerful sway an individual or small group can hold over larger elements of society through their art

Independent Study

Independent Study 198/298 - Individual student course contract

Variable Credit(s)

Independent Study (198/298): A variable credit course based on independent study, contracted between an instructor and a student. The emphasis will be in areas of student tutoring or research-related projects which provide an opportunity for students to pursue in-depth study in an area previously or concurrently covered in a survey or introductory course. Contact academic departments directly for information.

Current subject offerings:

- Art (ART)
- Biology (BI)
- Chemistry
- Computer Science
- Construction (CST)
- Dental Hygiene (DH)
- Drafting (DRF)
- Environmental Science (ENSC)
- Geographic Information Science (GIS)
- Honors (HON)
- Medical Assistant (MA)
- Multimedia (MUL)
- Music (MUS)
- Nursing (NRS)
- Paramedicine (EMS)
- Physical Therapist Assistant (PTA)
- Threatre Arts (TA)

Journalism

J 134 - Photojournalism

3 Credit(s)

This course is designed to work within the field of content. Content is not only the first step in good photojournalism, but also the first step in good art-making. The course will explore how you see an image, choose to share that image, and the message your images carry. Other topics include the history of photojournalism and the crossover from documentary photography to the world of art.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Produce a cohesive set of documentary photographs
- Produce a series of photographs in the form of a photo essay
- Produce a series of photographs in the form of a picture essay
- Produce a series of photographs (color slides) in which color plays an important part in the visual impact of the images

J 216 - Newswriting 1

3 Credit(s)

The study and practice of newsgathering and writing objective news stories. Discussions center on concept of news and news values, ethics, interviewing and traditional journalism methods, and standards as practiced by established American newspapers.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Demonstrate advanced understanding of news reporting and news writing as a process. Explore journalist writing processes
2. Develop and demonstrate the ability to understand the impact of the communication process
3. Develop an understanding of news values and how news impacts people on a local, regional, national and global level
4. Develop writing skills based on journalistic integrity and professional ethics

Library**LIB 127 - Research Skills and Information Literacy**

1 Credit(s)

Students will develop critical thinking skills needed to locate, evaluate and cite information relevant to specific research needs. The course develops research skills and confidence that contribute to success in other college courses and life experiences.

Learning Outcomes

Upon successful completion of this course, the student will:

1. Appreciate the nature of scholarly conversation, as well as the role and organization of information in contemporary society and in the academic library.
2. Demonstrate an understanding of research as a recursive process, requiring creativity and persistence.
3. Efficiently search for and locate information online using the free Web.
4. Evaluate websites and other materials as to their relevance, currency, authority, purpose, and point of view.
5. Select and develop a suitable topic for research, and formulate a list of relevant keywords using websites, Library databases and other research tools.
6. Search for and locate relevant books at the Lane Community College Library and at other libraries.
7. Search for and locate relevant articles from newspapers, popular magazines, and scholarly journals.
8. Articulate the reasons why we cite our sources, and construct a bibliography of relevant and high-quality materials, formatted in a standard relevant citation style.

Manufacturing Technology**CNC 101 - CNC Concepts**

3 Credit(s)

This course is an introduction to computer Numerical Control (CNC) machinery and processes. It teaches basic concepts necessary for further study in CNC manufacturing.

Learning Outcomes

Upon successful completion of this course the student will:

1. Recall and describe the CNC machinery and processes used in a modern manufacturing environments.

CNC 102 - CNC Setup and Operation

3 Credit(s)

This course introduces basic Computer Numerical Control (CNC) setup and operation including part setup and tool offsets on Haas Mills and Lathes using CNC simulators and machinery.

Prerequisite: CNC 101 or assessment

Learning Outcomes

Upon successful completion of this course students will be able to:

1. Relate and describe major concepts involved with the setup and operation of CNC equipment including tool and fixture offsets and program loading. They will be able to efficiently and accurately create a sample part from raw stock when provided with a working gcode program.

CNC 103 - CNC Programming

3 Credit(s)

This course teaches basic 2 1/2 axis CNC Mill and 2 axis CNC Lathe programming with G-code

Prerequisite/Corequisite: CNC 102

Learning Outcomes

Upon successful completion of this course students will be able to:

1. Read and write basic G-code for the CNC mill and lathe. Students will be able to identify common mistakes made in G-code programs and create programs to produce parts from supplied drawings.

CNC 108 - CNC Projects

3 Credit(s)

This course gives students a chance to demonstrate and reinforce their Computer Numerical Control (CNC) machining skills through the completion of projects on the CNC mill and lathe.

Prerequisite/Corequisite: CNC 102 and CNC 103

Learning Outcomes

Upon successful completion of this course students will:

1. Have demonstrated their ability to apply CNC machining skills learned in lectures to a series of shop projects utilizing CNC mills, CNC lathes and shop support equipment.

CNC 201 - CNC Mill

3 Credit(s)

This course continues Computer Numerical Control (CNC) machining instruction. It covers more advanced topics specific to the CNC mill such as part fixturing, multi-operation setups and 3 axis milling.

Prerequisite: CNC 103 and CNC 108

Learning Outcomes

Upon successful completion of this course students will be able to:

1. Program, setup and run accurate, quality parts using Haas CNC Mills.

CNC 202 - CNC Lathe

3 Credit(s)

This course continues Computer Numerical Control (CNC) machining instruction. It covers more advanced topics specific to the CNC lathe such as canned cycles and use of a wider range of cutting tools and setups.

Prerequisite: CNC 201 and MFG 243

Learning Outcomes

Upon successful completion of this course students will be able to:

1. Program, setup and run accurate, quality parts using Haas CNC Lathes.

CNC 208 - CNC Advanced Projects

6 Credit(s)

This course gives students a chance to demonstrate and reinforce their Computer Numerical Control (CNC) machining skills through the completion of projects on the CNC mill and lathe.

Prerequisite: MFG 244

Prerequisite/Corequisite: CNC 202

Learning Outcomes

Upon successful completion of this course students will be able to:

1. Demonstrate their CNC machining skills by designing and producing complex parts on the CNC mill, CNC lathe and support equipment.

CNC 209 - Advanced CNC Concepts

6 Credit(s)

This course covers advanced Computer Numerical Control (CNC) concepts including use of 4 axis lathes and 5 axis mills

Prerequisite: CNC 201 and CNC 202

Learning Outcomes

Upon completion of this course students will be able to:

1. Demonstrate familiarity with 4 axis lathe and multi-axis mill programming, setup and operation.

MFG 101 - Safety and Basic Shop Practice

3 Credit(s)

This fundamental course introduces students to safe and efficient shop practices necessary to be successful in a manufacturing environment. Concepts are presented through a series of lectures and online activities. Skills are reinforced through demonstrations introducing basic shop equipment.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Safely operate in a manufacturing environment
 2. Recognize and describe safety hazards and ergonomic issues as well as explain how organization and cleanliness affect safe and efficient performance
-

MFG 102 - Shop Measurement and Coordinate System

3 Credit(s)

This course teaches basic measurement, print reading and concepts necessary to be successful in a shop environment. Topics covered include: Mixing ratios, Cartesian coordinate systems, speed and feeds, basic trigonometry for technicians.

Prerequisite/Corequisite: MFG 101

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Solve problems using basic math related to manufacturing, for example determining proper speeds and feeds for cutting conditions.
 2. Solve more complex manufacturing problems using the cartesian coordinate system and trigonometry.
 3. Determine the proper measurement tools used for different applications and be able to demonstrate their use.
-

MFG 103 - Metal Cutting Basics

3 Credit(s)

This course teaches the basics of metal cutting. Topics covered include: Shop Metallurgy, tool geometry, order of operations and machining strategies.

Prerequisite/Corequisite: MFG 102

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Recall and describe concepts of basic metallurgy, tool geometry, order of operations and machining strategies as they apply to manufacturing projects.
 2. Apply these concepts to safely and efficiently plan and complete shop projects.
-

MFG 151 - Manufacturing 1

6 Credit(s)

This course consists of a series of projects demonstrating and strengthening manual shop skills. Students are provided with drawings and instructions which they will use to create a series of projects of increasing complexity.

Prerequisite/Corequisite: MFG 103

Learning Outcomes

Upon successful completion of this course, students will have:

1. Demonstrated their ability to apply machining skills learned in lectures to a series of shop projects utilizing manual mills, lathes and shop support equipment.
-

MFG 152 - Manufacturing 2

4 Credit(s)

This course consists of a series of projects demonstrating and strengthening manual shop skills. Students are provided with drawings and instructions which they will use to create a series of projects of increasing complexity.

Prerequisite: MFG 151

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Demonstrate their ability to apply machining skills learned in lectures to a series of shop projects utilizing manual mills, lathes and shop support equipment.
-

MFG 153 - Manufacturing 3

5 Credit(s)

This course consists of a series of projects demonstrating and strengthening manual shop skills. Students are provided with drawings and instructions which they will use to create a series of projects of increasing complexity.

Prerequisite: MFG 152

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Demonstrate their ability to apply machining skills learned in lectures to a series of shop projects utilizing manual mills, lathes and shop support equipment.
-

MFG 209 - Advanced Manufacturing Processes

6 Credit(s)

This course covers advanced machining and shop support concepts including surface grinding, dividing head use, tool and cutter grinding and machinery maintenance and repair.

Prerequisite: MFG 254 and MFG 255

Corequisite: MFG 254

Learning Outcomes

Upon completion of this course, students will be able to:

1. Demonstrate their familiarity with and skill in using advanced manual machinery and tooling such as the dividing head, rotary table, and surface grinder, along with more advanced milling and lathe setups.
-

MFG 241 - Solid Modeling 1

3 Credit(s)

Solid modeling is the precise modeling of parts in 3 dimensions. In manufacturing, 3D models can be used both for design and to create manufacturing instructions and processes. This course introduces solid modeling using Solidworks, the most popular solid modeling software for machining.

Prerequisite: MFG 102

Learning Outcomes

Upon completion of this course, students will be familiar with the parametric solid modeling process, the Solidworks user interface and manipulations of planes, layers and objects to complete modeling tasks.

MFG 242 - Solid Modeling 2

3 Credit(s)

This course continues solid modeling instruction with Solidworks including more advanced topics such as assemblies and basic engineering analysis.

Prerequisite: MFG 241

Learning Outcomes

Upon completion of this course, students will be able to create and manipulate assemblies, use advanced modeling concepts and techniques to complete design tasks for the creation of parts.

MFG 243 - CAM 1

6 Credit(s)

Computer Aided Manufacturing (CAM) uses computer models to automatically generate gcode for the control of CNC mills and lathes. This course teaches CAM for 2D mills and lathes using Mastercam, the most popular CAM software used in the manufacturing industry.

Prerequisite: CNC 103

Learning Outcomes

Upon completion of this course, students will be able to import solid models, manipulate planes and origins and generate basic mill and lathe toolpaths using Mastercam software. In addition, they will be able to debug their toolpaths using simulation and backplotting features.

MFG 244 - CAM 2

6 Credit(s)

Computer Aided Manufacturing (CAM) uses computer models to automatically generate gcode for the control of CNC mills and lathes. This course teaches CAM for 2D mills and lathes using Mastercam, the most popular CAM software used in the manufacturing industry.

Prerequisite: CNC 103

Learning Outcomes

Upon completion of this course, students will be able to:

1. Create solid models in Mastercam and apply advanced toolpaths to them.
 2. Use machine modeling techniques for toolpath verification and collision avoidance.
-

MFG 254 - Manufacturing 4

6 Credit(s)

This course consists of a series of projects demonstrating and strengthening manual shop skills. Students are provided with drawings which they will use to create a series of projects of increasing complexity.

Prerequisite: MFG 153

Learning Outcomes

Upon successful completion of this course, students will have demonstrated their ability to apply machining skills learned in lectures to a series of shop projects utilizing manual mills, lathes and shop support equipment.

MFG 255 - Manufacturing 5

6 Credit(s)

This course consists of a series of projects demonstrating and strengthening manual shop skills. Students are provided with drawings and instructions which they will use to create a series of projects of increasing complexity. In addition this course introduces manual machine maintenance and repair.

Prerequisite: MFG 254**Learning Outcomes**

Upon successful completion of this course students will have

1. Demonstrated their ability to apply machining skills learned in lectures to a series of shop projects utilizing manual mills, lathes and shop support equipment.

Mathematics

For Math Course Sequences, view the sequence chart

CG 123 - Amplify My Math Preparation (AMMP)

1 Credit(s)

This course is intended for students who desire to strengthen study skills, problem-solving abilities, and previously learned mathematical skills. As part of this course, students participate in activities designed to strengthen critical thinking skills and skills to support success in the college learning environment. This course also reshapes students' math attitudes, develops study skills, addresses math and test anxiety, and fosters productive persistence, reflection, and self-efficacy. This course provides a structured setting for students to refresh and review math skills in order to improve their math placement by utilizing ALEKS PPL Learning Modules. This course requires students to use online software for working on the learning modules. Having internet access outside of class is necessary since some homework will be completed in an online learning system (ALEKS).

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Explain the factors and characteristics that contribute to success in a math class
2. Apply strategies for developing an internal locus of control, productive perseverance, self-efficacy, and self-esteem
3. Explain and apply techniques to improve listening, reading, test-taking, and note-taking in traditional and online math classes
4. Explain the factors and characteristics that contribute to success in a math class
5. Explain personal learning styles and how they can improve memory
6. Develop a study schedule and positive study environment plan
7. Develop core math skills in preparation for program math courses
8. Apply techniques for test, math, and general anxiety reduction

MTH 010 - Whole Numbers, Fractions, Decimals

3 Credit(s)

Students will review whole number skills and learn to compute with fractions and decimals. Concepts, problem solving, and applications will be integrated into the curriculum to increase students' abilities and to extend their understanding of basic math principles in preparation for higher level math courses. Effective math study strategies and math anxiety issues will be discussed to increase students' confidence in their abilities to succeed in math classes and to use math in daily life. MTH010 is intended for students who need to strengthen their basic math skills before moving on to MTH 020.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Add, subtract, multiply, and divide whole numbers
2. Identify characteristics of even, odd, prime, and composite numbers
3. Solve real world application problems using whole numbers
4. Order whole numbers using < and >
5. List factors and multiples of a given number
6. Compute problems using the order of operations
7. Use math vocabulary
8. Compute area and perimeter of rectangles using whole numbers
9. Add, subtract, multiply, and divide fractions with like and unlike denominators
10. Reduce fractions
11. Compare fractions using <, > or =
12. Convert fractions to decimals
13. Solve real world problems using fractions
14. Compute area and perimeter of rectangles using fractions

15. Use vocabulary of fraction terms
16. Add, subtract, multiply, and divide using decimals
17. Identify place value in decimal numbers
18. Compare decimals using <, > or =
19. Convert decimals to fractions
20. Solve real world application problems using decimals
21. Compute area and perimeter of rectangles using decimals
22. Selects appropriate math study strategies
23. Monitors and evaluates personal confidence progress
24. Utilizes appropriate math resources

MTH 020 - Math Renewal

4 Credit(s)

If you have taken a higher level math course than this and passed the course with a C- or better, you may not use this course for your degree/certificate requirements. This course begins with a review of whole number, fraction, and decimal arithmetic that includes rounding, estimation, order of operations, averages, and the solving of one-step equations. This review is followed by an introduction to ratios, proportions, percent, measurement, and basic geometry in a problem-solving context, with the review skills integrated throughout. Some applications for technical careers will be incorporated for students in professional technical programs.

Prerequisite: MTH 010 completed with a grade of "C-" or better within the past two years or placement by the College's Math Placement Process.**Learning Outcomes**

Upon successful completion of this course, the student should be able to:

1. Apply reasoning and problem solving skills to basic mathematics problems
2. Use estimation in basic math problems
3. Check the reasonableness of answers
4. Perform fraction computations and applications with accuracy
5. Perform decimal computations and applications with accuracy
6. Write and simplify ratios and rates
7. Recognize when and where ratios or proportions apply
8. Set up and solve proportions
9. Convert between fractions, decimals, and percents
10. Solve the three basic types of percent problems
11. Set up and solve percent application problems
12. Solve applications using area and perimeter of simple geometric shapes
13. Solve basic equations of the type $a + x = b$ and $ax = b$, involving whole numbers, fractions and decimals
14. Use a scientific calculator to explore and solve basic math problems
15. Apply study skills for learning mathematics and for coping with math anxiety
16. Use the symbols and vocabulary of basic mathematics correctly
17. Use American and metric measurement

MTH 025 - Basic Mathematics Applications

3 Credit(s)

Basic fraction, decimal, percent, and ratios skills will be assumed. MTH 025 is a course in the application of basic mathematics to everyday situations. Topics include applications involving budget and retirement, simple and compound interest, mortgage and charge options, household and garden, health formulas, food preparation, measurement systems, markup and discounts. This course will include skill maintenance and explorations, and may involve group work and projects.

Prerequisite: MTH 020 completed with a grade of "C-" or better within the past two years or placement by the College's Math Placement Process.**Learning Outcomes**

Upon successful completion of this course, the student should be able to:

1. Use basic math for applications pertaining to personal finance: calculating sales tax, tips, percent increase and decrease; mental addition of fractions; calculating budgets, mortgages, charge options; computing simple and compound interest and annuities using formulas; using computer software to graph budgets
2. Use basic math for applications pertaining to personal health: analyzing food labels, using formulas with health issues, use the Internet to locate data for health issues, reading line and bar graphs for data
3. Use basic math for applications pertaining to business finance: computing percents of percents, computing employee payroll taxes, calculating percents with markups, reading tables and graphs for data, computing mean and median
4. Use basic math for applications pertaining to an industrial business such as a culinary arts business, converting measurements, computing percent yields on supplies

5. Use basic math for applications pertaining to measurements, use of metrics, cost of residential electricity, converting square units, computing areas

MTH 025C - Basic Mathematics Applications

3 Credit(s)

Basic fraction, decimal, percent, and ratios skills will be assumed. MTH 025C is a course in the application of basic mathematics to everyday situations in culinary practice. Topics include applications involving budget, food preparation, measurement systems, yield percents, recipe conversions, nutritional labels, payroll, and discounts. The course will focus on group work, skill maintenance, investigations.

Prerequisite: MTH 020 completed with a grade of "C-" or better within the past two years or placement by the College's Math Placement Process.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Apply math basics pertaining to culinary arts – including fractions, percents, proportions, word problems, unit analysis
2. Use customary units of measure – both United States and metric units
3. Use math for applications of yield percent, cost, recipe conversions, recipe costing, nutritional labels, edible portion and as-purchased quantities, unit costing
4. Use percents in applications of budget and payroll

MTH 052 - Math for Health and Physical Sciences

4 Credit(s)

This is a pre-algebra level course in professional-technical mathematics used in chemistry, dosage computation, and other science-related courses. Topics include unit conversions, metrics, scientific notation, significant figures, rates, proportions, percent applications, graphs, algebra of units, and logarithms for pH.

Prerequisite: MTH 020 completed with a grade of "C-" or better within the past two years or placement by the College's Math Placement Process.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Practice decimal and fraction operations and apply to solve applications
2. Demonstrate the correct use of English, metric and apothecary units of measurement
3. Solve problems using unit (dimensional) analysis
4. Apply concepts of approximate numbers for rounding measurements
5. Demonstrate the correct use of labels for measurements, applications, and graphs
6. Use basic geometric formulas for area and perimeter of quadrilaterals
7. Compute with signed numbers
8. Solve equations and formulas for one variable
9. Interpret and create line graphs
10. Calculate and label slope of line graphs
11. Solve problems involving percents
12. Solve problems involving proportions for solutions and variation
13. Use and compare Fahrenheit, Celsius, and Kelvin temperature scales
14. Find the volume and density of objects
15. Calculate pH quantities involving logarithms
16. Calculate dosages for oral meds and injected meds including reconstituted liquids
17. Use and compute with exponential and scientific notation
18. Calculate both by hand and scientific calculator when appropriate

MTH 060 - Beginning Algebra

4 Credit(s)

This is the first term of a two-term sequence in introductory algebra. Topics include a selective review of arithmetic, tables and graphs, signed numbers, problem solving, linear equations, linear inequalities, ratio and proportion, and unit analysis. MTH 060 prepares students for Elementary Algebra, MTH 065. MTH 060 and MTH 065 provide a two-term sequence preparatory to Intermediate Algebra, MTH 095.

Prerequisite: MTH 020 completed with a grade of "C-" or better within the past two years or placement by the College's Math Placement Process.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Maintain, use, and expand skills and concepts learned in previous mathematics courses. Perform operations with fractions and decimals. Use unit analysis to convert units and solve problems
2. Perform addition, subtraction, multiplication, and division of rational numbers
3. Use and apply the concepts and language of algebraic expressions. Use variables to construct algebraic expressions. Evaluate algebraic expressions

and simplify expressions using order of operations. Simplify algebraic expressions by removing parentheses and combining like terms

4. Solve linear equations and inequalities. Solve linear equations and formulas algebraically. Solve linear inequalities and graph their solutions on a number line
5. Use algebra to solve application problems. Translate verbal models into algebraic expressions and/or equations. Solve problems. Solve problems involving simple interest, motion, and mixtures. Solve problems using ratios and proportions. Solve problems involving similar triangles. Solve geometry problems involving perimeter, area, and volume
6. Interpret information represented numerically and graphically, and recognize linear relationships represented verbally, numerically, graphically, and algebraically. Read and interpret information given in a table or graph. Locate points in a rectangular coordinate system and represent equations in two variables graphically. Identify the horizontal and vertical intercepts of the graph of an equation and interpret them in terms of an application. Identify the slope of a line and interpret it in terms of an application. Use the slope-intercept form of the equation of a line
7. Make appropriate and efficient use of a scientific calculator (Note: Students will be expected to demonstrate achievement of some objectives without the use of a calculator)

MTH 065 - Elementary Algebra

4 Credit(s)

This is the second term of a two-term sequence in introductory algebra. Students having successfully completed MTH 060 should continue with this course in preparation for taking Intermediate Algebra (MTH 095). Topics include systems of linear equations, exponents, polynomials, factoring, quadratic equations, introduction to functions, and rational expressions.

Prerequisite: MTH 060 completed with a grade of C- or better within the past two years, or placement test.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Maintain, use, and expand skills and concepts learned in previous mathematics courses
 - a. Solve linear equations algebraically
 - b. Calculate slope of a line and find intercepts
 - c. Graph equations in two variables
 - d. Write equations in point-slope form and slope-intercept form
2. Solve linear systems of two equations in two unknowns
 - a. Solve algebraically and by graphing
 - b. Solve application problems involving linear systems of equations (Includes simple interest, motion, and mixture problems)
3. Evaluate and/or simplify expressions using the rules of (integer) exponents
4. Use scientific notation
5. Use the terminology of polynomials and add, subtract, multiply, and divide polynomials
 - a. Recognize and use the terminology of polynomials
 - b. Evaluate polynomials
 - c. Add, subtract, and multiply polynomials
 - d. Divide a polynomial by a monomial
6. Factor polynomials, including multivariable polynomials
 - a. Factor polynomials by removing a common monomial factor
 - b. Factor trinomials
 - c. Factor special products

MTH 070 - Introductory Algebra

5 Credit(s)

This course is a fast-paced review of algebra for students with recent algebra experience. For students without recent algebra experience, MTH 060 and MTH 065 provide a more relaxed and thorough introduction to the subject. (Qualified students who are unsure whether to take MTH 070 or MTH 060 should seek the advice of a Counselor or Advisor.) MTH 070 prepares students for Intermediate Algebra (MTH 095). Topics include a selective review of arithmetic, tables and graphs, signed numbers, problem solving, linear equations, linear inequalities, ratios and proportions, unit analysis, systems of linear equations, polynomials, factoring, quadratic equations, introduction to functions, rational expressions, and exponents.

Prerequisite: Placement by the College's Math Placement Process within the past two years.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Maintain, use, and expand skills and concepts learned in previous mathematics courses
 - a. Perform operations with fractions and decimals
 - b. Use unit analysis to convert units and solve problems
2. Perform addition, subtraction, multiplication, and division of rational numbers
3. Use and apply the concepts and language of algebraic expressions
 - a. Use variables to construct algebraic expressions
 - b. Evaluate algebraic expressions and simplify expressions using order of operations
 - c. Simplify algebraic expressions by removing parentheses and combining like terms
4. Solve linear equations and inequalities
 - a. Solve linear equations and formulas algebraically
 - b. Solve linear inequalities and graph their solutions on a number line and using interval notation
5. Use algebra to solve application problems
 - a. Translate verbal models into algebraic expressions and/or equations. Solve problems
 - b. Solve problems using ratios and proportions
 - c. Solve problems involving similar triangles
 - d. Solve geometry problems involving perimeter, area, and volume
6. Interpret information, represented numerically and graphically, and recognize linear relationships represented verbally, numerically, graphically, and algebraically
 - a. Read and interpret information given in a table or from a graph
 - b. Locate points in a rectangular coordinate system and represent equations in two variables graphically
 - c. Identify the horizontal and vertical intercepts of the graph of an equation and interpret them in terms of an application
 - d. Identify the slope of a line and interpret it in terms of an application
 - e. Use the slope-intercept form of the equation of a line
 - f. Use the point-slope form of the equation of a line
 - g. Recognize the relationship between the slopes of two lines that are parallel or perpendicular
7. Solve linear systems of two equations algebraically and graphically
 - a. Solve algebraically and by graphing
 - b. Solve application problems involving linear systems of equations (including simple interest, motion, and mixture problems)
8. Evaluate and/or simplify expressions using the rules of exponents
9. Use scientific notation
10. Use the terminology of polynomials and add, subtract, multiply and divide polynomials
 - a. Recognize and use the terminology of polynomials
 - b. Evaluate polynomials
 - c. Add, subtract, multiply, and divide (by a monomial) polynomials
11. Factor polynomials
 - a. Factor polynomials by removing a common monomial factor
 - b. Factor by grouping
 - c. Factor trinomials
 - d. Factor special products
12. Recognize and use quadratic equations
 - a. Sketch the graph of a quadratic equation in two variables and identify the intercepts and vertex graphically
 - b. Solve a quadratic equation by factoring
 - c. Solve applications by writing and solving quadratic equations (by factoring), including problems involving the Pythagorean Theorem
13. Understand the basic definition of a function
 - a. Recognize and interpret function notation
 - b. Evaluate functions using function notation
 - c. Find the domain of a function defined by a table or list of ordered pairs
14. Recognize and use rational expressions
 - a. Recognize values of a variable that make a rational expression undefined
 - b. Reduce rational expressions to lowest terms
 - c. Multiply and divide rational expressions
 - d. Add and Subtract rational expressions with like denominators
15. Make appropriate and efficient use of a scientific calculator

MTH 075 - Applied Algebra for Technicians

4 Credit(s)

This is a first course in algebra skills needed for technical mathematics, which includes the following: signed numbers, positive and negative exponents, scientific notation, forming expressions and equations from real situations, ratio and proportion, the Cartesian coordinate systems, rates of change, slope, linear equations, linear systems, quadratic equations, graphs, tables, charts, data analysis and problem solving. The course will emphasize clear communication of mathematical results. Application problems are realistic with some data to be collected, analyzed and discussed in group setting with results submitted in written form.

Prerequisite: MTH 020 completed with a grade of "C-" or better within the past two years or placement by the College's Math Placement Process.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Demonstrate an understanding of the vocabulary for each of the areas below
 - a. Signed Numbers
 - b. Integer Exponents
 - c. Multi-step Formulas (including Variation)
 - d. Algebraic Expressions
 - e. Cartesian Coordinate System
 - f. Linear Equations
 - g. Quadratic Equations
2. Demonstrate the ability to solve problems using:
 - a. Signed Numbers
 - b. Integer Exponents
 - c. Multi-step Formulas (including Variation)
 - d. Algebraic Expressions
 - e. Cartesian Coordinate System
 - f. Linear Equations
 - g. Quadratic Equations
 - h. Analyze and solve problems using a variety of problem-solving techniques including patterns, tables, graphs and spreadsheets
3. Demonstrate an ability to utilize a hand-held calculator successfully in solving a variety of problems

MTH 082 - Math for Network Operations

4 Credit(s)

This course satisfies math requirements for students in the Computer Networking program. Topics include number bases, binary and hexadecimal math and logical operators, ASCII character encoding, hexadecimal color representations, basic internet protocol math, error-correction code algorithms, and basic cryptography

Prerequisite: MTH 020 completed with a grade of "C-" or better within the past two years or placement by the College's Math Placement Process.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Understand and use different number bases
2. Perform operations in base 2 (binary)
3. Understand and use basic logical operators
4. Understand and use basic IPv4 math
5. Understand and perform basic cryptography
6. Understand and use error correction algorithms

MTH 085 - Applied Geometry for Technicians

4 Credit(s)

MTH 085 Applied Geometry includes the following: linear, square, and cubic units, dimensional analysis in metric and US customary measures, problem solving, angle measure, properties of pairs of angles formed by system of parallel, perpendicular, and transversal lines; perimeter and area of polygons and circles; surface area and volume of solid figures such as prisms and pyramids; similarity, ratio, and proportion, right triangle trigonometry. Oblique triangle trigonometry is an optional topic. Some algebra topics from MTH 075 will be applied. The course will emphasize clear communication of mathematical results. Application problems are realistic with some data to be collected, analyzed, and discussed in group setting with results submitted in written form.

Prerequisite: MTH 075 completed with a grade of "C-" or better within the past two years or placement by the College's Math Placement Process.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Determine angle measurements in drawings involving triangles, parallel lines, and central angles
2. Use a protractor appropriately
3. Name basic shapes and describe their properties
4. Determine what folds up into a simple 3D shape
5. Apply properties of isosceles and equilateral triangles
6. Utilize the US Customary and metric system of units for length, area, volume, and weight
7. Use unit analysis to convert measurements including square and cubic units
8. Use conversion charts to convert measurements
9. Apply densities to determine weight or volume
10. Calculate perimeters, areas, volumes, and surface areas of geometric shapes
11. Evaluate formulas related to geometric measure
12. Solve applied ratio and proportion problems
13. Apply properties of similar triangles to find lengths
14. Apply properties of right triangles and use the Pythagorean Theorem
15. Apply trigonometric ratios to determine angles and lengths in right triangles
16. Apply the Law of Sines and the Law of Cosines (Optional)
17. Solve application problems involving geometry and measurement appropriate to technical fields
18. Simplify elementary algebraic expressions
19. Solve elementary algebraic equations and formulas
20. Communicate problem-solving steps clearly, particularly in graphics and writing

MTH 095 - Intermediate Algebra

5 Credit(s)

Topics include equations, function notation, polynomials, coordinate graphing, rational equations, radical equations, exponents, quadratic functions, absolute value equations and inequalities, exponential and logarithmic functions, inequalities and problem solving methods. This course provides a foundation for MTH 097, MTH 105-107, MTH 111, or MTH 211 or MTH 213.

Prerequisite: MTH 065 or MTH 070 completed with a grade of "C-" or better within the past two years or placement by the College's Math Placement Process.

Learning Outcomes

Upon successful completion of the course the student will be able to:

1. Use prerequisite concepts and skills of the arithmetic of real numbers
2. Manipulate and evaluate expressions involving exponents and use scientific notation
3. Simplify expressions involving polynomials, including factoring
4. Simplify and perform operations involving rational expressions
5. Solve equations involving rational expressions
6. Solve application problems leading to equations involving rational expressions
7. Use function notation and distinguish between input and output
8. Write the equation of a line and graph lines on a rectangular coordinate system
9. Solve linear equations and apply linear equations to application problems
10. Solve and graph a linear inequality and use interval notation
11. Simplify and perform operations involving radical expressions
12. Solve equations involving radical expressions
13. Solve application problems leading to equations involving radical expressions
14. Write the square root of a negative number in terms of i and operate with complex numbers
15. Solve quadratic equations by taking square roots, by completing the square, and by the quadratic formula
16. Given a quadratic function find its vertex, axis of symmetry, and intercepts, and graph the parabola
17. Model and solve application problems involving quadratic equations and functions
18. Evaluate an exponential function
19. Translate between equivalent exponential and logarithmic notations
20. Model and solve application problems involving exponential and logarithmic equations
21. Use a scientific calculator when appropriate and in an efficient manner
22. Solve absolute value equations and inequalities

MTH 097 - Geometry

4 Credit(s)

A course in informal geometry covering the study of lines, planes, polygons, circles, solids, area, perimeter, volume, surface area, Pythagorean Theorem, congruence, and similar figures. Applications and exploration of geometry topics rather than proofs will be stressed. MTH 097 is strongly recommended for MTH

111 and MTH 112.

Prerequisite: MTH 095 or MTH 111 completed with a grade of "C-" or better within the past two years or placement by the College's Math Placement Process.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Use inductive reasoning to discover geometric relationships
2. Know and be able to use the common terms for 2 and 3 dimensional geometric figures
3. Understand concepts of perimeter, area, volume, and surface area
4. Apply the Pythagorean theorem to a variety of situations
5. Identify congruent triangles
6. Apply the theory of parallel lines in appropriate situations
7. Apply similar triangles and the basic trigonometric relations in applied situations
8. Use tools such as the compass, protractor, and computer to create geometric diagrams and patterns.
9. Use algebra to solve geometric problems
9. Understand and write simple proofs
10. Explain the application of geometry to a chosen topic of interest (project-optional)

MTH 098 - Math Literacy

5 Credit(s)

This course provides algebra, quantitative reasoning, and problem solving skills needed in Math 105, 106, 107, and in other college courses in programs not requiring calculus. For students who do not need calculus, Math 098 is an alternative to Math 060/065/095 as a pathway to MTH 105, 106, & 107.

Prerequisite: MTH 020 completed with a grade of "C-" or better within the past two years or placement by the College's Math Placement Process.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Interpret quantitative information presented numerically, verbally or graphically
2. Create and use mathematical models
3. Demonstrate critical thinking in quantitative settings
4. Express mathematical ideas vocally and in writing
5. Apply mathematical skills with civic, environmental, and ethical awareness
6. Make appropriate use of calculators and spreadsheet software
7. Use ratios, rates, and percents to compare quantities
8. Use proportional reasoning to solve problems
9. Evaluate expressions and use formulas in a variety of contexts
10. Express numbers with scientific notation
11. Convert quantities using dimensional analysis
12. Use rates of change and percent increase and decrease to describe changing quantities
13. Write linear and exponential models. Recognize them in graphical and numerical contexts
14. Select a graph for presenting a given data set
15. Calculate a mean or weighted mean in a given context

MTH 105 - Math in Society

4 Credit(s)

MTH 105, 106, and 107 are a three-course sequence but may be taken in any order. MTH 105 is a survey of mathematical topics and applications of those topics for non-science majors including financial math, probability, statistics, and can include other topics approved by the Mathematics Department such as logic, sets, voting methods, and apportionment.

Prerequisite: MTH 095 or MTH 098, or equivalent course completed with a grade of "C-" or better within the past two years or placement by the College's Math Placement Process.

Learning Outcomes

After successful completion of this course, students will be able to:

1. Apply learning: a) Use mathematics and quantitative reasoning to solve problems b) Show appropriate mathematical mechanics and techniques c) Apply skills and abilities to new situations in and out of the classroom d) Demonstrate skills and proficiencies in algebraic manipulation and calculator use
2. Think critically: a) Choose an appropriate solution strategy b) Construct a mathematical plan to solve a problem. c) Determine the reasonableness and implications of mathematical solutions d) Recognize the limitations of mathematical models

3. Communicate effectively: a) Clarify and explain thought process and solution b) Explain results orally and/or in writing c) Collaborate with others to solve problems effectively d) Interpret results and solutions e) Justify reasoning and solution
4. Engage diverse values with civic and ethical awareness: a) Evaluate how various decisions would fit with personal values and civic awareness b) Practice decision-making in authentic settings with realistic numbers
5. Create ideas and solutions: a) Reflect on successes, failures, and obstacles encountered in the problem-solving process b) Assess mistakes and rework solutions

MTH 106 - Math in Society 2

4 Credit(s)

MTH 105, 106, and 107 are a three-course sequence but may be taken in any order. MTH 106 is a survey of mathematical topics and applications of these topics for non-science majors. Topics include linear and exponential modeling, scheduling, history and uses of geometry, and can include other topics approved by the Mathematics Department such as historical counting systems and cryptography.

Prerequisite: MTH 095 or MTH 098, or equivalent course completed with a grade of "C-" or better within the past two years or placement by the College's Math Placement Process.

Learning Outcomes

1. Apply learning
 - a. Use mathematics and quantitative reasoning to solve problems
 - b. Show appropriate mathematical mechanics and techniques
 - c. Apply skills and abilities to new situations in and out of the classroom
 - d. Demonstrate skills and proficiencies in algebraic manipulation and calculator use
2. Think critically
 - a. Choose an appropriate solution strategy
 - b. Construct a mathematical plan to solve a problem
 - c. Determine the reasonableness and implications of mathematical solutions
 - d. Recognize the limitations of mathematical models
3. Communicate effectively a. Clarify and explain thought process and solution b. Explain results orally and/or in writing c. Collaborate with others to solve problems effectively d. Interpret results and solutions e. Justify reasoning and solution
4. Engage diverse values with civic and ethical awareness
 - a. Evaluate how various decisions would fit with personal values and civic awareness
 - b. Practice decision-making in authentic settings with realistic numbers
5. Create ideas and solutions
 - a. Reflect on successes, failures, and obstacles encountered in the problem-solving process
 - b. Assess mistakes and rework solutions

MTH 107 - Math in Society 3

4 Credit(s)

MTH 105, 106, and 107 are a three-course sequence but may be taken in any order. MTH 107 is a survey of mathematical topics and applications of these topics for non-science majors. Topics include weighted voting, fair division, and graph theory, and can include other topics approved by the Mathematics Department such as map coloring and mathematics in art.

Prerequisite: MTH 095 or MTH 098, or equivalent course completed with a grade of "C-" or better within the past two years or placement by the College's Math Placement Process.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Define the fairness criteria for elections and determine which of the criteria a given voting system satisfies
2. Determine the outcome of a weighted voting system
3. Explain the meaning and importance of fairness criteria for election methods
4. Determine whether or not a particular apportionment falls prey to the New State paradox, the Population paradox, or the Alabama paradox
5. Explain the meaning and importance of fairness criteria for election methods
6. Determine whether or not a division is fair or envy-free
7. Collaborate with group members to discuss and explain class concepts, solve application problems, and propose new problems and scenarios

8. Reflect on successes, failures, and obstacles encountered in the problem-solving process
9. Assess mistakes and rework solutions on certain assignments
10. Construct and organize solutions in appropriate ways; clarify and explain thought process and solution
11. Justify solutions with appropriate graphics, examples, and mathematical arguments
12. Determine the winner of an election using a variety of different voting methods
13. Determine if a coalition is a winning or losing coalition
14. Use Euler's theorem to determine if a given graph contains an Euler path or an Euler circuit
15. Determine which of the fairness criteria a voting method satisfies
16. Determine the outcome of a weighted voting system
17. Determine a modified quota and modified divisor, given the size of the population and the number of seats to be apportioned
18. Determine whether or not a particular apportionment satisfies the Quota rule
19. Compute the Banzhaf power index of a weighted voting system
20. Fairly divide a quantity using divide-and-choose methods for two, three, or more players
21. Fairly divide a collection of objects
22. Apportion seats using a variety of methods
23. Find the minimal spanning trees of a given graph
24. Find approximate solutions to the traveling merchant problem

MTH 111 - College Algebra

5 Credit(s)

College Algebra is the study of basic functions and their applications. This includes polynomial, rational, exponential, and logarithmic functions and their inverses. Other topics include an introduction to sequences and non-linear systems of equations. In accordance with national recommendations, this course emphasizes skill building, problem solving, modeling, reasoning, communication, connections with other disciplines, and the appropriate use of technology.

Prerequisite: MTH 095 completed with a grade of "C-" or better within the past two years or placement by the College's Math Placement Process.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Maintain, use, and expand the skills and concepts learned in previous mathematics courses
2. Apply the midpoint formula, distance formula, properties of lines, and equations of circles to the solution of problems from coordinate geometry
3. Use and apply the concepts, language, notation, and evaluation of functions, including input-output ideas, domain, range, increasing, decreasing, maximum values, minimum values, symmetry, odd, even, composition of functions, and inverses
4. Use substitution to create an equation defining one quantity as a function of another
5. Apply principles of transformations (shifts, reflections, and stretches) to equations and graphs of functions
6. Recognize, sketch, and interpret the graphs of the basic functions without the use of a calculator
7. Identify and apply properties of polynomial functions
8. Identify and apply properties of rational functions with and without a calculator
9. Identify and apply properties of exponential and logarithmic expressions and functions
10. Analyze a function by interpreting its graph, using a graphing calculator
11. Translate a set of numerical data into graphical form, choose a function (linear or exponential) to model the data, and interpret the implications of the model (optional - time permitting)
12. Translate word problems into mathematical expressions, solve the problems, and interpret the solutions
13. Communicate ideas of college algebra through English statements and mathematical sentences
14. Use the language and skills of precalculus that are important for success in calculus
15. Write and evaluate the notation of sequences and series including n th terms, summations, and factorials
16. Solve nonlinear systems of equations algebraically and graphically (optional – time permitting)

17. Identify sequences as arithmetic, geometric, or neither and apply appropriate formulas related to those sequences to solve problems (optional - time permitting)
18. Accurately apply the mathematics learned in college algebra to topics from the student's world

MTH 112 - Trigonometry

5 Credit(s)

Trigonometry has wide applications in the world around us. It is a vital tool in construction, physics, and engineering. Trigonometry is preparatory for Calculus 1 (Differential Calculus, MTH 251). The major topics covered include radian measure, circular functions and their graphs, right triangle ratios and related trigonometric functions, identities, solving trigonometric equations, law of sines, law of cosines, and applications. Other topics include polar coordinates, parametric equations, vectors, and conic sections. Some background in geometry is strongly recommended.

Prerequisite: MTH 111 completed with a grade of "C-" or better within the past two years or placement by the College's Math Placement Process.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Use geometry, algebra, and graphing calculator skills from previous courses
2. Move easily between degree and radian measure
3. Identify and use the six trigonometric functions in right triangle applications
4. Identify features of and use of the six circular functions
5. Graph the six circular functions and related transformations and extract features from their equations and graphs
6. Recall and apply the basic trigonometric identities
7. Use the sum, difference, double-angle, and half-angle identities
8. Identify features of and use the three major inverse trigonometric functions
9. Solve trigonometric equations analytically and with graphing technology
10. Apply the Law of Sines and Law of Cosines where appropriate
11. Use polar coordinates and polar equations and transform them to rectangular form and back
12. Use complex numbers in standard form and in polar form (time permitting)
13. Solve problems using vector notation
14. Use parametric equations
15. Work with the definitions, equations, and graphs of conic sections
16. Apply geometric and trigonometric relationships to applied problems
17. Use a graphing calculator to graph equations and explore concepts for equations in rectangular, parametric, or polar form

MTH 199A - Corequisite Support for MTH 105 (Math in Society)

1 Credit(s)

This support course focuses on the foundational skills and concepts needed to be persistent and successful in MTH 105 (Math in Society). Students will receive appropriate support as needed in arithmetic, algebra, problem-solving, technology, and study skills in an interactive setting.

Prerequisite: MTH 020 or placement into MTH 098

Learning Outcomes

Students who successfully complete this course will be able to:

1. Solve application problems, interpret, and communicate the results in context
2. Demonstrate relevant skills to effectively engage with the concepts and skills needed in MTH 105
3. Utilize study habits and learning strategies that promote success in MTH 105

MTH 211 - Fundamentals of Elementary Mathematics 1

4 Credit(s)

The course includes a survey of mathematical topics for those interested in the presentation of mathematics at the K-9 levels. A variety of manipulative and heuristic problem solving strategies are used. Emphasis is on problem solving, patterns, sequences, set theory, an introduction to logic, numeration systems, number bases, arithmetic operations with whole numbers and integers, and number theory.

Prerequisite: MTH 095 completed with a grade of "C-" or better within the past two years or placement by the College's Math Placement Process.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Recognize and apply problem solving strategies to solve routine and non-routine problems. Explain and apply Polya's 4 step problem solving process. Use Venn Diagrams to solve problems. Use calculators and/or computers

while exploring elementary mathematics topics. Reason logically, deductively and inductively, by solving a variety of problems

2. Recognize and apply patterns of numbers, objects or symbols in a variety of ways
3. Recognize and apply strategies to sequences such as arithmetic, geometric, or otherwise
4. Understand and apply the concept of set theory. Recognize the relationships between sets. Understand and apply operations on sets and use set notation correctly. Justify and apply the properties of sets of numbers such as closure, commutative, associative, identity, and distributive
5. Recognize and apply strategies to topics of elementary logic. Recognize statements and non-statements. Recognize and use forms of statements such as conditionals and bi-conditionals. Know and use quantifiers and be able to write negations of statements with quantifiers. Be able to write the converse, inverse and contrapositive of a given implication. Reason logically using direct reasoning, indirect reasoning and transitivity
6. Recognize and apply strategies with numeration systems. Understand the development and attributes of historical systems. Understand the properties of systems in different bases. Recognize and apply the interpretations for the four operations with whole numbers. Use a variety of manipulatives to model concepts and operations. Demonstrate the four operations using a variety of algorithms, models, explanations, and examples. Identify and apply mental math and estimation techniques. Identify the mathematical properties that justify algorithms for whole numbers
7. Recognize and apply strategies with number theory topics. Understand "prime" and "composite" numbers and be able to apply the divisibility rules. Understand and apply the properties of odd and even numbers. Understand and apply the techniques for finding the greatest common divisor and the least common multiple

MTH 212 - Fundamentals of Elementary Mathematics 2

4 Credit(s)

The course includes a survey of mathematical topics for those interested in the presentation of mathematics at the K-9 levels. A variety of manipulative and heuristic problem solving strategies are used. Emphasis is on problem solving, rational numbers (as fractions and decimals), irrational and real numbers, proportional reasoning, percent, using elementary algebra (use of variables, equation solving, relations and functions), and an introduction to probability.

Prerequisite: MTH 211 completed with a grade of C- or better within the past two years.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Recognize and apply problem solving strategies to solve routine and non-routine problems.
2. Recognize and apply strategies for real numbers. Understand and apply definitions, and properties, with fractions, decimals, percent, and integers. Understand and apply algorithms for the operations with real numbers. Understand and apply properties with irrational numbers. Understand and apply strategies for mental math and estimations with rational numbers. Apply a variety of models and examples to illustrate properties and operations of rational numbers. Understand and apply ratios and proportions. Solve problems using proportional reasoning.
3. Understand the basics of elementary algebra. Be able to use variables and algebraic expressions to generalize a given pattern. Be able to solve equations. Know the definitions of "relation" and "function". Be able to recognize and work with functions as equations, tables, diagrams and graphs. Use a variety of manipulatives to model concepts.
4. Recognize and apply strategies for simple probability. Distinguish and apply concepts of experimental and theoretical probabilities. Explain and apply the properties of probability. Create simulations of experiments to explore sample spaces. Compute probabilities of events using properties and sample spaces. Apply the fundamental counting principle to calculate probabilities. Use the fundamental counting principle with permutations and combination

MTH 213 - Fundamentals of Elementary Mathematics 3

4 Credit(s)

The course includes a survey of mathematical topics for those interested in the presentation of mathematics at the K-9 levels. A variety of manipulative and heuristic problem solving strategies are used. Emphasis is on problem solving, elementary statistics, introductory geometry (basic definitions, vocabulary, polygons, angles, 2-3 dimensional geometry, congruence, constructions,

similarity), transformational geometry, and measurement systems.

Prerequisite: MTH 211 or MTH 212 completed with a grade of C- or better within the past two years.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Recognize and apply problem solving strategies to solve routine and non-routine problems.
2. Recognize and apply strategies for statistics. Understand and apply properties of central tendencies and variations. Use different display techniques correctly. Identify misleading or misuses of statistics and graphs. Understand and apply properties of the normal distribution curve.
3. Recognize and apply strategies for informal geometry. Describe and apply the properties of curves, points, lines, planes, two and three dimensional shapes. Describe angles and compute angle measurements. Make constructions and drawings with tools and with a computer drawing utility. Apply congruency and similarity properties to geometric shapes. Define attributes of two and three dimensional shapes.
4. Recognize and apply strategies for transformational geometry. Describe and apply the properties of symmetry, rotation, reflections, and translations. Apply size transformations correctly.
5. Recognize and apply strategies for measurement systems. Understand and apply non-standard units for informal measurement. Understand and apply the English system and perform conversions with length, area, and volume. Convert measurements using different techniques. Understand and apply the metric system and perform conversions with length, area, and volume. Derive measurement formulas for two and three dimensional figures

MTH 231 - Discrete Mathematics 1

4 Credit(s)

Topics include formal logic, methods of proof, sequences, recursion and mathematical induction. Also included are combinatorics, set and graph theory and trees. The order of the topics may vary with instructor and text.

Prerequisite: MTH 112 completed with a grade of "C-" or better within the past two years or placement by the College's Math Placement Process.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Use propositional calculus notation and techniques to determine the validity of logical statements and proofs
2. Write canonical expressions for truth functions
3. Methods to simplify Boolean expressions and logic networks
4. Translate Boolean expressions to and from logics networks
5. Use techniques of direct proofs and proofs by contradiction
6. Apply techniques of mathematical induction to proofs

MTH 232 - Discrete Mathematics 2

4 Credit(s)

Topics include functions, relations, Pigeonhole principle, isomorphisms, Boolean algebras, and recursion. The order of the topics may vary with instructor and text.

Prerequisite: MTH 231 completed with a grade of C- or better within the past two years.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply notation and technique to functions, inverse functions and composition of functions
2. Apply recursion to sequences. Use recursive definitions. Use recursive in logical arguments
3. Use set theory in logical arguments and Boolean algebra
4. Determine if a given mathematical structure is a Boolean algebra
5. Prove elementary properties of Boolean algebras
6. Know the properties of relations on finite and infinite sets
7. Understand equivalence relations and equivalence classes
8. Use modular arithmetic
9. Differentiate between partial and total order relations

MTH 241 - Elementary Calculus 1

4 Credit(s)

Differential calculus (without Trigonometry) for business and social sciences. Some review of algebraic techniques. Major emphasis is on limits; continuity; derivatives with applications; and exponential and logarithmic functions, their derivatives and applications.

Prerequisite: MTH 111 completed with a grade of "C-" or better within the past

two years or placement by the College's Math Placement Process.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Find limits for various functions and solve continuity problems
2. Solve rates of change applications
3. Find derivatives of single variable functions by definition and by rules
4. Differentiate logarithmic and exponential functions by rules
5. Solve exponential growth and decay problems, as time permits
6. Employ handwork and/or graphing calculators to graph, differentiate, find increasing and decreasing intervals, find maximums and minimums, concavity, points of inflection, and find intercepts
7. Solve maxima and minima application problems using calculus
8. Solve business problems using geometry and derivatives
9. Solve business applications of elasticity
10. Use implicit differentiation and related rates to solve graphing, geometry and business applications
11. Use graphing calculators to graph functions to check their calculus hand-work

MTH 242 - Elementary Calculus 2

4 Credit(s)

Integral calculus (without Trigonometry) for business and social sciences.

Integration and applications for single variable functions, techniques of integration, partial differentiation methods for multivariate functions and their relative extrema.

Prerequisite: MTH 241 with a grade of C- or better completed within the past two years.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Find antiderivatives of single variable functions.
2. Find indefinite integrals for functions combining polynomial, exponential, and logarithmic functions.
3. Calculate definite integrals for polynomial, logarithmic, exponential functions.
4. Apply integration techniques to find areas under and between curves.
5. Apply integration techniques to find net changes of continuous functions.
6. Find the average value of a function with integration.
7. Find partial derivatives of functions of several variables.
8. Find relative extrema for two variable functions.
9. Find points for 3 D functions.
10. Apply technique of Lagrange multipliers to maximize or minimize a function of several variables with a constraint.
11. Apply the Hessian method to optimize functions of two variables.
12. Use multiple integrals to evaluate volumes over rectangular areas and average values of functions of two variables

MTH 243 - Introduction to Probability and Statistics

4 Credit(s)

Discrete and continuous probability, data description and analysis, measures of central tendency and variability, sampling distributions, and basic concepts of statistical inference, including confidence intervals, hypothesis testing, correlation, and regression.

Prerequisite: MTH 105, MTH 111, or equivalent course completed with a grade of "C-" or better within the past two years or placement by the College's Math Placement Process.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Classify data as categorical or quantitative
2. Construct frequency bar charts, histograms, boxplots, stemplots and scatterplots
3. Use descriptive statistics for center, location and spread
4. Demonstrate an understanding of probability experiments, outcomes and events
5. Recognize disjoint and independent events
6. Find and interpret theoretical and statistical probabilities, including compound and conditional probabilities
7. Find probabilities and values for a normal distribution
8. Find probabilities for uniform, binomial, and Poisson distributions
9. Use the Central Limit Theorem to construct confidence intervals for population mean
10. Construct confidence intervals for population proportion
11. Test hypotheses about one or two population means
12. Test hypotheses about one or two population proportions

13. Interpret the correlation coefficient and its square
14. Create regression lines and test their statistical significance
15. Test the independence of two categorical variables using Chi-square
16. Demonstrate an understanding of sampling and basic research design
17. Demonstrate an understanding of sources of bias and error in statistical research
18. Use statistical software and the statistical features of a graphing calculator

MTH 251 - Calculus 1 (Differential Calculus)

5 Credit(s)

MTH 251 is a first-term calculus course that includes a selective review of precalculus followed by development of the derivative from the perspective of rates of change, slopes of tangent lines, and numerical and graphical limits of difference quotients. The limit of the difference quotient is used as a basis for formulating analytical methods that include the power, product, and quotient rules. The chain rule and the technique of implicit differentiation are developed.

Procedures for differentiating polynomial, exponential, logarithmic, and trigonometric functions are formulated. Analytical, graphical, and numerical methods are used to support one another in developing the course material. Opportunities are provided for students to work in groups, verbalize concepts with one another, and explore concepts and applications using technology.

Prerequisite: MTH 112 completed with a grade of "C-" or better within the past five (5) years or placement by the College's Math Placement Process.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Understand the definition of the derivative as the limit of the difference quotient for a function
2. Be able to use the definition of the derivative to find derivatives of certain elementary functions
3. Find derivatives numerically utilizing technology
4. Visualize and interpret derivatives graphically
5. Understand and use the derivative of a function as a function in its own right
6. Understand the development and use of procedures for differentiating polynomial, exponential, logarithmic, and trigonometric functions, including the inverse sine & inverse tangent functions
7. Use the power, product, quotient, and chain rules to find derivatives of functions
8. Use the technique of implicit differentiation to find derivatives of implicitly defined functions
9. Find equations of tangent lines to the graphs of functions at specific points
10. Understand local linearity and that the tangent line to the graph of a function at a specific point is the best linear approximation for the function at that point
11. Use linear approximation to estimate function values
12. Use the methods and techniques of differential calculus to solve a variety of application problems, including optimization and related rate problems
13. Use a programmable graphing calculator as an effective tool in confirming analytical work and obtaining numerical and graphical results related to differential calculus

MTH 252 - Calculus 2 (Integral Calculus)

5 Credit(s)

This is a second-term calculus course covering definite and indefinite integrals. Specific topics include conceptual development of the definite integral, properties of the definite integral, the first and second Fundamental Theorems of Calculus, constructing antiderivatives, techniques of indefinite integration, approximating definite integrals, and applications. Analytical, graphical, and numerical methods are used to support one another in developing the course material. Opportunities are provided for students to work in groups, verbalize concepts with one another, and explore concepts and applications using technology.

Prerequisite: MTH 251 or equivalent course completed with a grade of C- or better completed within the past five years.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Estimate & calculate totals given information about rates of change
2. Understand the definite integral as a limit of Riemann sums.
3. Interpret the meaning of and use correct notation for a definite integral.
4. Compute definite integrals using the first fundamental theorem of calculus.
5. Understand how the definite integral and the average value of a function are related.
6. Use properties and theorems pertaining to integrals.

7. Graphically and numerically construct antiderivatives.
8. Work with elementary differential equations.
9. Work with functions defined in terms of definite integrals with a variable limit(s) of integration and apply the second fundamental theorem of calculus to the analysis of these functions.
10. Understand that the indefinite integral represents a family of antiderivative functions.
11. Find definite & indefinite integrals using basic rules, the substitution method, integration by parts, and trigonometric substitution.
12. Use the midpoint, trapezoid, and Simpson's rule to approximate definite integrals.
13. Identify improper integrals that converge or diverge and compute their values where possible.
14. Use the methods & techniques of integral calculus to solve a variety of application problems.
15. Use a programmable graphing calculator as an effective tool in confirming analytical work and obtaining numerical and graphical results related to integral calculus

MTH 253 - Calculus 3 (Infinite Series and Sequences)

5 Credit(s)

This is the third term of a six-term sequence. Topics include: Indeterminate forms and improper integrals. Parametric and polar equations. Sequences and Series. Investigation of the convergence of series. Taylor series and power series.

Prerequisite: MTH 252 completed with a grade of C- or better within the past five years.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Use algebra, geometry, trigonometry, differential and integral calculus skills from prerequisite courses to solve math problems.
2. Demonstrate adequate understanding of principles of integration; analytic geometry including parametric equations, polar coordinates and conic sections; and infinite sequences and series, including Taylor series.
3. Use arithmetic and algebra for integration techniques including trig substitution and partial fractions.

MTH 254 - Vector Calculus 1 (Introduction to Vectors and Multidimensions)

4 Credit(s)

This is the fourth term of a six-term sequence. Major emphasis is on three-dimensional vectors and differential calculus of several variables.

Prerequisite: MTH 252 completed with a grade of "C-" or better within the past five years.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Use algebra, geometry, trigonometry, differential and integral calculus skills from prerequisite courses to solve math problems
2. Demonstrate adequate understanding of three dimensional vectors, rectangular, cylindrical and spherical coordinate systems, vector functions, functions of two or more variables and application of these topics
3. Use arithmetic and algebra for calculating distances in space, and for parametric equations of lines in space
4. Design and follow a multi-step mathematical process through to a logical conclusion and judge the reasonableness of the results in problems involving distance, velocity, acceleration and curvature in 3-space; problems involving optimization; and others

MTH 255 - Vector Calculus 2 (Introduction to Vector Analysis)

4 Credit(s)

This is the fifth term of a six-term sequence. Major emphasis is on multiple integration, vector fields, and applications.

Prerequisite: MTH 254 completed with a grade of C- or better within the past five years.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Use algebra, geometry, trigonometry, differential and integral calculus skills from prerequisite courses to solve math problems.
2. Demonstrate adequate understanding of double and triple integrals including polar, cylindrical and spherical systems; line and surface integrals; several theorems, flux and curl; and application of these topics.
3. Use arithmetic and algebra in the evaluation of double, triple, line and surface integrals, and in the calculation of divergence and curl.

- Problems involving volume, surface area, center of gravity, and flux require students to design and follow a multi-step mathematical process through to a logical conclusion and judge the reasonableness of the results.
- Create mathematical models, analyze these models, and, when appropriate, find and interpret solutions in problems involving volume, surface area, center of gravity, and flux

MTH 256 - Applied Differential Equations

4 Credit(s)

An introductory course in differential equations and their applications. The course covers methods of solving ordinary differential equations including first order linear and nonlinear equations, second order linear equations, and higher order equations. Students are also introduced to solving linear systems of first order differential equations and to the method of Laplace transforms. Applications to science and engineering are emphasized.

Prerequisite: MTH 254 completed with a grade of C- or better completed within the past five years.

Learning Outcomes

Upon successful completion of the course, the student will be able to:

- Apply elementary methods of solution to solve first order linear differential equations, selected first order nonlinear differential equations, and higher order linear differential equations with constant coefficients, both homogeneous and non-homogeneous cases.
- Demonstrate specialized methods of solving certain types of differential equations. These methods include power series methods, Laplace transforms, and matrix methods of solving systems of linear differential equations.
- Model problems from science and engineering using the language of differential equations and investigate the applicability of the mathematical solutions to these problems.
- Understand that many problems cannot be satisfactorily solved by elementary analytical techniques and will approximate solutions numerically.
- Use analytical and numerical procedures from differential equations to solve problems in science and engineering.
- Express in written and oral form the process of modeling used in applications of differential equations and the

MTH 260 - Linear Algebra

4 Credit(s)

This course provides a mathematical foundation of computation, terminology and theory of linear algebra. The course covers systems of linear equations, vectors in a geometric setting, real vector spaces, matrices, operations on matrices, inversion of matrices, determinants, linear transformations, dot product and cross product, and eigenvalues and eigenvectors.

Prerequisite: MTH 232 or MTH 252 with a grade of C- or better within the past five years.

Learning Outcomes

Upon successful completion of this course, the student will:

- Perform basic operations of matrix algebra and apply them to solve systems of linear equations.
- Discuss the basic concepts of vector spaces, linear transformations and inner product spaces.
- Interpret the concepts of vector spaces from a geometric perspective.
- Apply the techniques of linear algebra to problems in applied mathematics such as the calculation of eigenvalues and eigenvectors.
- Apply the knowledge of linear algebra to numerical methods such as Gaussian Elimination.

MTH 261 - Introduction to Linear Algebra

2 Credit(s)

The course covers systems of linear equations, vectors, matrices, determinants, linear transformations, dot product and cross product, and eigenvalues and eigenvectors. Intended for engineering majors.

Prerequisite: MTH 252 completed with a grade of C- or better within the past five years.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Apply properties of matrix algebra to solve systems of linear equations
- Apply properties of vector algebra to solve two- and three-dimensional geometric problems

- Describe a linear transformation given the corresponding matrix, and find a matrix given the description of the linear transformation
- Test a set of vectors for linear independence
- Solve eigenvalue/eigenvector problems

MTH 265 - Statistics for Scientists and Engineers

4 Credit(s)

A calculus-based introduction to probability and statistics with applications to science and engineering disciplines. Topics include: data description and analysis, random variables, expectation, discrete and continuous probability theory, common probability distributions, sampling distributions, estimation, confidence intervals, hypothesis testing, control charts, regression analysis, and experimental design. This course satisfies the OSU requirement of ST 314 for engineering programs.

Prerequisite: MTH 252 completed with a grade of C- or better within the past five years.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Identify the role of statistics within the engineering profession
- Apply statistical methodology and tools to the engineering problem-solving process.
- Create graphs, charts and diagrams in ways meaningful for interpretation
- Understand the basic concepts of probability, random variables, probability distribution, and joint probability distribution.
- Demonstrate an understanding of variability in engineering processes through modeling such variability
- Explain/understand sampling distributions, the central limit theorem and compute point estimation of parameters
- Construct confidence intervals, hypothesis testing on parameters and apply the tools of statistical inference to various studies
- Describe statistical process controls and the use of control charts
- Construct and interpret linear regression models involving one or more independent variables
- Exhibit principles of experimental design by recognizing when such principles can be put to use for engineering problems

Medical Assistant

MA 110 - Clinical Assistant 1

3 Credit(s)

Introduction to clinical assisting in the ambulatory care setting. Includes learning aseptic technique, sterilization of instruments, exam room techniques, vital signs, taking a patient history, proper handling of patient medical record and documentation requirements.

Prerequisite: Admission to the Medical Assistant program

Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Organize and plan housekeeping details in a medical office; observe necessary precautions for office security.
- Prepare and properly sterilize materials and instruments used in a physician's office; operate sterilization equipment.
- Perform patient draping techniques and assist with the patient examination.
- Take and record patient's Temperature, Pulse, and Respirations.
- Measure and record the patient's blood pressure.
- Measure and record the patient's height and weight, in Metric and English Units.
- Measure patient's visual acuity.
- Teach the patient home monitoring of routine vital signs.
- Identify, (correctly spell) and state the use of the most commonly used surgical and diagnostic instruments used in a medical office.
- Possess a basic understanding of microorganisms, disease terminology, and how to prevent transmission of disease.
- List the recommendations included in the universal precaution for infection control.
- Demonstrate the knowledge to convert measurements from the English Units to Metric or Apothecary measure by passing a test by 90% or more.

MA 112 - Medical Insurance Procedures

3 Credit(s)

This course includes a computation component. Medical reimbursement management for private health and accident insurance, Medicare, Medicaid, Workers' Compensation. Abstracting information from health records for billing and transfer forms. Introduction to the use of CPT-4 and ICD-9/10-CM coding. Introduction to the CMS provider office billing form.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Apply general knowledge of insurance/health insurance industry
2. Use insurance/ health insurance vocabulary
3. Complete a variety of medical office /insurance forms
4. Gather information used to process insurance claims from different types of forms
5. Communicate the content and components of an Explanation of Benefits (EOB) form

MA 119 - Introduction to Medical Coding and Scribing

3 Credit(s)

This course introduces students to basic ICD-10 and CPT-4 coding procedures. This includes abstracting from healthcare documentation/records and assigning alphanumeric codes to diagnoses and procedures. The course also introduces students to basics of Medical scribing in outpatient healthcare providers' offices.

Prerequisite/Corequisite: HP 152 or BI 233 with a grade of C or better.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Interpret basic coding rules and apply them when choosing a code for diagnosis and treatment
2. Assign codes to the highest level of specificity
3. Verbalize the benefits for the provider by participating in the VBP (Value Based Purchasing) Incentive program created by Centers for Medicare and Medicaid
4. Understand coding principles ICD-10 codes change often and the focus of the practice may also change. The EHR will require maintenance by personnel to include the correct code choices

MA 120 - Clinical Assistant 2

3 Credit(s)

Continuation of MA 110 Clinical Assistant. Includes identification, care and use of clinical instruments. Preparation for assisting physician with office procedures and surgeries. Introduction to basic pharmacology and drug identification. Identification of injection sites, introduction to preparation of injectables; instruction in mixing and administering ID, SQ, and IM injections; application of bandages and dressings. ECG instruction.

Prerequisite: Admission to the Medical Assistant program

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Review the use of fifty (50) most common instruments used in the physician's office
2. Demonstrate the ability to set up a sterile field and arrange appropriate surgical instruments for the most common surgical procedures in the physician's office
3. Explain the sizing standards of suture material and the criteria used to select the most appropriate type and size
4. Possess knowledge of terms used and demonstrate the use of dressings and bandages
5. Understand fundamentals of pharmacology and identification of medications (using the Physician's Desk Reference)
6. Describe the parts of a prescription; discuss legal and ethical implications of medication administration
7. Define the law in terms of administering, prescribing and dispensing drugs
8. List the guidelines to follow when preparing and administering medications
9. Correctly spell and identify the Drug Category of the top 100 drugs prescribed in the USA
10. Identify injection sites, syringe identification, the proper drawing up of medications, and demonstrate injection technique on a simulator
11. Draw up and administer minimum of two (2) Intradermal, two (2) Subcutaneous, and two (2) Intramuscular injections to an adult patient (student) using aseptic technique
12. Understand fundamental principles and operation of ECG equipment

13. Demonstrate the skill of performing a diagnostic ECG on an Adult (student)

14. Pass the final Dosage Computation test with a score of 90% or better

MA 130 - Clinical Assistant 3

3 Credit(s)

Continuation of MA 120. This course includes ordering and scheduling diagnostic testing per doctor's instructions, instructing patients with special needs, and dealing with office emergencies.

Prerequisite: Admission to the Medical Assistant program

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Identify with 100 % accuracy the most common equipment used in the physician's office, and demonstrate the operation of such equipment authorized by the physician.
2. Demonstrate professional attitudes and actions while assisting patients in the office setting.
3. Demonstrate telephone professionalism and courtesy.
4. Define the Triage phone call, and explain why accurate documentation in the medical record is important.
5. Identify what is a crisis in a medical office and take proper action according to training and ability (First Aid, CPR, and 911 Communications).
6. Identify the precautions used to avoid overexposure to radiation for self and the patient.
7. List specific radiological examinations and the patient preparation instructions for each exam.
8. Define rehabilitation medicine and explain its importance in patient care.
9. Describe assistive devices and demonstrate the safety precautions/techniques to use when assisting a patient.
10. Describe the relationship of nutrition to the functions of the digestive system of the human body.
11. Discuss nutrition for the various stages of life (from infant needs to geriatric needs).
12. Identify various therapeutic diets and the importance to a particular disease.
13. Demonstrate the competency as a clinical assistant in a physician's office (Co-op Education Evaluations).
14. Complete and pass the final Dosage Computation test with a score of 90% or better.
15. Present to the class a report on a selected Human Disease.
16. Demonstrate Protective Practices

MA 150 - Laboratory Orientation

3 Credit(s)

Study of various office laboratory procedures and, in most instances, how to do them; hematology, urinalysis, immunology and phlebotomy.

Prerequisite: Admission to the Medical Assistant program

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Recognize the purpose of the clinical laboratory, as well as its departmental and personnel structure.
2. Demonstrate a basic foundation in medical terminology, especially as it applies to the clinical laboratory.
3. Explain some ethical and legal considerations for laboratory personnel.
4. Define and state the critical importance of infection control in the ambulatory care setting and the physician's office lab (POL).
5. Demonstrate a thorough knowledge of various safety issues in the laboratory and the healthcare environment.
6. Explain the importance of CLIA and the regulations of testing in the POL.
7. Describe and demonstrate the concepts of quality control and quality assurance in the POL.
8. Dispose of specimens and equipment in accordance with federal, state and local guidelines.
9. Explain the types of equipment used to obtain specimens from a patient.
10. Demonstrate how to correctly complete a laboratory requisition.
11. Explain the importance of correct patient identification, complete specimen labeling, and proper handling, storage and delivery of patient specimens.
12. Describe the hazards and complications of drawing blood.
13. Explain and perform venipunctures on live patients using a vacutainer and a syringe.
14. Instruct and demonstrate to a patient how to monitor their own blood glucose.

15. Perform various CLIA waived lab tests in a manner acceptable for entry-level employment.
16. List the most common lab profiles and explain the body system or function being surveyed.
17. Identify abnormal or critical lab test results.
18. Demonstrate the proper use and care of a compound microscope.
19. Apply ethical standards and professionalism in the medical laboratory

Multimedia

MUL 101 - Introduction to Media Arts

3 Credit(s)

Introduction to Media Arts provides an overview of the Media Arts program as well as insight into what careers the program can lead to. Students will learn the expectations of the program and courses and what resources are available to afford them a greater chance of success in the program and the field.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Know the breadth of the Media Arts program and the different aspects of each Media Arts area of study
2. Know the expectations and rigor of the Media Arts program
3. Know the culture and rigor of media arts production and creative Professionals
4. Locate and use college resources and understand college processes
5. Know the structures and processes of a collaborative production environment
6. Understand the importance of being proactive and being a problem solver in this program and industry
7. Demonstrate a basic knowledge of how to use a workstation in a production environment

MUL 103 - Time-Based Tools

4 Credit(s)

A introductory course in digital time-based tools, covering foundational timeline-based software and hardware tools, skills, and theories used in video, audio, motion graphics, interactive, live, and other time-based productions.

Learning Outcomes

Upon course completion, students will be able to:

1. Create and analyze a diverse variety of expressed creative project content
2. Create a diversity of work using current software and hardware technologies that demonstrates understanding of theory and practice
3. Create a diversity of work using current software and hardware technologies
4. Define professional level production standards and evaluate course productions based on professional standards

MUL 105 - Digital Photography

4 Credit(s)

A foundational course on Digital Single-Lens Reflex (DSLR) cameras and lenses, sensors, data capture, processing, pixels, resolution, asset management, tagging, frames, depth of field, lighting, outputting, distribution, construction, image-making strategies, and emerging and experimental forms.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Understand the mechanics, physics, and manual operation of DSLR cameras
2. Effectively select and use DSLR lenses, tripods, and simple lighting kits
3. Effectively organize and manage digital assets
4. Effectively plan and shoot a series of high resolution digital images
5. Be familiar with an array of digital hardware and software tools
6. Understand theories and aesthetics of contemporary image making

MUL 110 - Introduction to Graphic Design

1 Credit(s)

An introductory course that presents in-depth information about a career in Graphic Design. Includes an investigation into job opportunities, the design process, required skills, education, and work conditions.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Define Graphic Design and describe major areas of the industry
2. Describe the major industries that utilize graphic design services
3. Present the basic history of graphic design and cite the field's major influences

4. Identify the key vocabulary associated with the field
5. Describe the skill, education and experience required for employment in the field as well as the pros and cons of the career
6. Discuss the typical progression of a graphic design assignment from concept to completion
7. Discuss the relationship between graphic design technology and the impact of recent technological changes on the field

MUL 119 - Introduction to Animation

3 Credit(s)

This class introduces the principles of animation and its history. Students will explore fundamental techniques for creating the illusion of movement, learn the terminology of animation and investigate the art of visual narrative. Coursework will include flipbooks, storyboard animatics, and stop-motion, and the analysis of animated films.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Summarize the history of animation; identify technological developments and explain how those advances shape form and content
2. Use and explain the terminology/vocabulary core to working in animation
3. Critically appraise the impact of animated media on culture
4. Demonstrate basic principles of animation, primarily: Squash and stretch, anticipation, staging, timing

MUL 205 - Design Studio

3 Credit(s)

Design Studio is a class for qualified second year graphic design students. This class operates as a real design studio and takes real jobs from both the college as well as non-profit organizations from the community. Students also team-produce a 52-page magazine.

Prerequisite: MUL 229, MUL 232 and ART 289

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Assess new design job
2. Determine customer's needs, ascertain and obtain all information and assets within timeline for deliverables
3. Communicate project plan with client via Creative Brief for approval
4. Discuss with co-workers and get feedback
5. Acquire all copy and images, do research on subject, check all content for verification, copyright information and citation as needed
6. Find design solutions and defend them, integrate other relevant points of view as needed for best outcome
7. Assess public interface of media created. Understand responsibility of being a media-maker
8. Get multi-cultural viewpoints on advertising campaigns and graphic message
9. Assess impact on a diverse community of consumers
10. Work with others and experts as needed to vet messages and get proper feedback before going live on the web or to press.
11. Attempt multiple ideas to achieve communication goals of project
12. Use computers and other resources to produce final product
13. Get feedback from instructor and team. Respond to feedback with amendments. Get feedback from client. Make amendments until completed. Debrief with instructors and team. Get final feedback from clients

MUL 208 - Motion Capture for Animation

4 Credit(s)

An introduction to the motion capture process for animation. Students learn the techniques and workflow of capturing and converting live action movement into a 3D model, storyboarding for motion capture, and assembling and rendering composed scenes into completed animation sequence.

Prerequisite: FA 221

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Break down a storyboard into sections that can be animated through motion capture
2. Work in a team based environment to prepare a short story to be brought to life through the animation process of motion capture
3. Demonstrate techniques of high fidelity animation through the use of markerless motion capture system
4. Express original ideas to developing a storyboard

5. Add, refine, question, and expand on existing ideas a way that respects others dissent
6. Critique fellow students work to identify problem areas and areas of success
7. Apply learned successful techniques to improve the group project and offer advice to fellow groups with problem areas

MUL 210 - Multimedia Design

3 Credit(s)

Students design and produce time-based multimedia experiences using digital production techniques in imaging, sound, and animation. Emphasis is on design, editing, and effect implementation, motion graphics, interface control, project management, and the understanding and implementation of production and project specifications.

Prerequisite: MUL 103

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Navigate the menus and panels of the program interface to efficiently accomplish specific goals
2. Utilize appropriate software applications to complete various stages within a production based on a client's specific needs
3. Create and refine storyboards within an approval process
4. Estimate production demands and correctly attribute public domain and creative commons content
5. Make intentional image, typography, video/audio, and effects choices that are appropriate for the client, target audience, and genre

MUL 212 - Digital Imaging

4 Credit(s)

Instruction in various aspects of digital imaging with an emphasis on bitmap (photographic) image design and processing using Adobe Photoshop.

Prerequisite: ART 216

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Utilize tools and processes of digital photo editing software
2. Plan, design, and produce complete composited image projects
3. Independently seek out and acquire new production and software skills
4. Critically assess and discuss visual design aesthetics & projects

MUL 215 - Digital Photography 2

3 Credit(s)

An advanced photography class that builds upon the skills learned in MUL105. Students will refine their use of DSLR and mirrorless cameras, Adobe Lightroom for asset management and the processing and printing of their photographs. Students will display and discuss their work during critiques as part of class each week. Work shown for critique will be both printed and electronically displayed. Students will learn to analyze each other's work during critique to further refine their own work.

Prerequisite: MUL 105

Learning Outcomes

Students who successfully complete this course will be able to:

1. Create a photographic essay (critique and group review)
2. Edit and revise student produced work using industry standard software (critique and review)
3. Present and discuss work in group critiques (presentations)

MUL 218 - Business Practices for Media Arts

3 Credit(s)

This course covers standard business practices relating specifically to the media industry. Develop the basic skills and resources for job searching, including writing a resume and proper business communication practices. Create a plan for developing your portfolio. Establish and organize an efficient workflow for a freelance business. Demonstrate an understanding of project management skills. This course is geared for Media Arts majors. It is recommended that you have completed at least one term of multimedia design, graphic design or web design coursework prior to taking this course.

Learning Outcomes

Upon successful completion of this course, the student will:

1. Be able to establish an organized and efficient workflow within an organization
2. Be able to lead client discussions which will allow strategic planning of marketing materials
3. Demonstrate mastery of project management, including timelines, budgets

4. Demonstrate a basic knowledge of standard business practices relating specifically to the media arts industry
5. Demonstrate a basic knowledge of responsibilities of designers and clients and how to resolve problems when they occur
6. Develop the basic skills and resources for job searching
7. Establish and organize an efficient workflow for a freelance business
8. Lead client discussions which will allow strategic planning of projects
9. Recognize and deal with ethical issues, such as privacy, confidentiality, conflict of interest, offensive content, and stereotypes as they relate to the media industry.
10. Demonstrate an understanding of making ethical choices when using outside sources

MUL 220 - Intermediate Typography

3 Credit(s)

This course provides students with an in-depth understanding of how typography is used to communicate content both visually, as image or design, as well as invisibly, through the use of well-chosen body type that is easily read. Type hierarchy and grid systems are explored in order to provide graphic design students with organizational layout skills. Communication of information, i.e., instructions, data, graphs and tables, will also be considered. Design principles for the whole page and multi-page document layout is also taught. Students perform a series of projects to demonstrate their understanding and skills in these areas.

Prerequisite: ART 119

Learning Outcomes

A person completing this course should be able to demonstrate:

Typography Literacy

- an understanding of Typography terminology
- an understanding of page layout and editorial design terminology

Typography Design

- effective use of basic design principles in page layout
- effective use of hierarchy in typographic design
- effective use of white space hierarchy in typographic design
- effective use of typefaces for a variety of typographic communication goals
- an understanding of how to design for accessibility within typographic design

Typography Production

- the ability to layout a multi-page document in a professional software program
- a basic understanding of booklet production

MUL 223 - Digital Sculpting and Texture

3 Credit(s)

This course will provide an introduction to the industry standard techniques involved in digital sculpting and texturing on 3d models. Students will learn how to use sculpt and paint layers to elevate the realism of computer generated objects ranging from environment props to organic characters.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Utilize advanced digital sculpting tools and sculpt layers within the software package
2. Produce high end texture maps from digital sculpt projects for use in game engines and other external animation programs
3. Use critical thinking to analyze anatomically correct structures and to apply that knowledge to fictional character sculpts
4. Apply and build upon learned skills from previous projects to produce an elevated end product

MUL 224 - Digital Painting

3 Credit(s)

Students will explore the art and technology of digital painting. In a lab classroom setting students will discover a range of expressive possibilities using a variety of digital painting software, technology, and techniques. Skills acquired during this course apply to animation, game concept art, illustration, and fine art.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Demonstrate proficiency utilizing digital art technology: digital tablets, cintiq tablets, digital painting software and applications

2. Demonstrate and explain professional digital workflow: Concept development, integration of analog and digital processes, output to print and digital platforms
3. Develop and apply critical and creative problem solving processes: Defining the problem (creative and technical), exploring solutions, assessing results
4. Demonstrate the ability to flexibly explore expressive possibilities using a variety of digital painting applications and techniques

MUL 227 - Graphic Design Literacy

3 Credit(s)

Graphic Design Literacy explores the history of graphic design in both its past and present context. This class serves both those who just want to increase their appreciation of graphic design and those who are interested in graphic design careers.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Use the appropriate vocabulary to articulate an understanding, in both historical and current contexts, of the definition of Graphic Design
 2. Use the appropriate vocabulary to articulate an understanding of the roots and shoots of the western design sensibility in historical and current contexts
 3. Use the appropriate vocabulary to articulate the impact on graphic design, in both historical and current contexts, of the Industrial Revolution and its counter movement in Arts and Crafts
 4. Use the appropriate vocabulary to articulate the impact, in both historical and current contexts, that Japanese Art had on European art & design in later 19th Century
 5. Use the appropriate vocabulary to articulate the impact on graphic design, in both historical and current contexts, of Art Nouveau and Secessionism at the fin de siecle
 6. Use the appropriate vocabulary to articulate the impact, in both historical and current contexts, that Modern Art and Modernism had on graphic design in the early to mid 20th Century
 7. To use the appropriate vocabulary to articulate the impact, in both historical and current contexts, that the Conceptual posters and Postmodern design of the later 20th century had on graphic design
 8. Use the appropriate vocabulary to articulate the impact on graphic design, in both historical and current contexts, of the digital revolution, its type innovations, and Retro design of the later 20th Century
 9. Use the appropriate vocabulary to articulate the impact on graphic design, in both historical and current contexts, of the world wide web and the advent of smart devices in the 21st century
-

MUL 228 - Graphic Design 1

4 Credit(s)

Available only to students accepted into the graphic design program, this course is an introduction to how graphic design, layout, and typography can be used to communicate to specific audiences. The design process from intake to finished piece is explored. This course introduces abstract concepts of communication that use gestalt principles, symbolism and metaphor to make the whole greater than the parts. A focus on logo design and corporate identity creation is used to reinforce core concepts. Students perform a variety of projects to demonstrate their skills and understanding of these.

Prerequisite: ART 115, ART 116, ART 119 and acceptance into the second year of the graphic design program

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Demonstrate an understanding of the principles of design as they relate to composition and layout as well as competency in the use of tools and techniques for preparation of "camera-ready" artwork
-

MUL 229 - Graphic Design 2

4 Credit(s)

Available only to students accepted into the graphic design program, this course explores graphic design in three dimensions through the design of brochures, packaging, and event graphics. Students learn grid systems, the use of templates and dielines, how to prepare files for print, proofing, cutting, scoring and folding in the completion of their projects. Students demonstrate an understanding of how to graphically communicate to a target audience while also considering the wider world audience.

Prerequisite: MUL 228

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Have a working knowledge of the graphic design field. That means a clear understanding of the tools, advertising concepts, and layout techniques to communicate a specific idea
 2. Become familiar with the technical language and processes essential for the designer to create and finish an original graphic image
-

MUL 230 - Graphic Design 3

4 Credit(s)

Available only to students accepted into the graphic design program, this course goes further into event graphics and corporate identity and includes design concepts for web and UI/UX. Students brand themselves and develop their resumes and portfolios throughout the term. Professional practices and job acquisition skills are taught.

Prerequisite: MUL 229

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Have demonstrated a working knowledge of the graphic design field
 2. Have clear understanding of the tools, advertising concepts and layout techniques to communicate a specific idea
 3. Be familiar with the technical language and processes essential for the designer to create and finish an original graphic image
-

MUL 231 - Graphic Design Production 1

3 Credit(s)

An introduction to digital prepress production with emphasis on page layout software and professional standards of production.

Prerequisite: ART 216 and acceptance into the second year of the graphic design program

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Identify the categories/terminology of typography
 2. Demonstrate ability to professionally typeset and format text
 3. Demonstrate ability to professionally proof text and layout for errors
 4. Demonstrate mastery of intermediate functions of layout software
 5. Demonstrate ability to follow a layout and produce artwork ready for reproduction
-

MUL 232 - Graphic Design Production 2

4 Credit(s)

An intermediate course in digital production with emphasis on professional standards of production.

Prerequisite: MUL 231

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Demonstrate professional typesetting, layout, and proofing production skills
 2. Identify technical issues of digital prepress including file size, file type, resolution, embedded files, trapping, converting PMS, etc.
 3. Demonstrate ability to successfully produce a variety of design projects
 4. Demonstrate ability to assess production requirements and troubleshoot problems
 5. Produce a variety of graphic design projects (most from supplied layouts)
-

MUL 233 - Graphic Design Production 3

4 Credit(s)

An advanced course in digital production with emphasis on professional standards of production.

Prerequisite: MUL 232

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Produce an estimate, schedule, and bill for a project
2. Demonstrate ability to evaluate, adjust and color correct imagery
3. Demonstrate ability to successfully produce a variety of design projects that meet professional standards
4. Demonstrate ability to produce a given layout under timed conditions
5. Demonstrate ability to take a project from design to printing

Multimedia Production

MDP 246 - Multimedia Production 1

4 Credit(s)

A practicum course giving students the opportunity to apply technical knowledge and skills learned in the first year classes to actual basic production situations with an emphasis in multimedia productions. Students can volunteer for production positions based on their own career interests and experience.

Prerequisite: FA 250, MUL 210, and VP 151. (VP 151 may be waived with instructor consent)

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Use their skills and knowledge as positive contributions to team production efforts
2. Relate the concepts of production design to the communication needs being addressed by a production
3. Demonstrate an understanding of applying basic visual treatments appropriately to media productions
4. Participate as a production team member in meeting time deadlines and professional production values required by productions scheduled for public distribution
5. Practice specialized individual production skills which will meet media workforce standards
6. Discuss current media production technologies and issues

MDP 247 - Multimedia Production 2

4 Credit(s)

A practicum course giving students the opportunity to apply technical knowledge and skills learned in the first year to actual intermediate production situations with an emphasis in multimedia productions. Class members can volunteer for production positions based on their own career interests and experience. Introduces current topics such as media issues, professional production techniques, changing media technology, and job market information.

Prerequisite: MDP 246, FA 261 and MUL 212

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Use their skills and knowledge as positive contributions to team production efforts
2. Relate the concepts of production design to the communication needs being addressed by a production
3. Demonstrate an understanding of applying basic visual treatments appropriately to media productions
4. Participate as a production team member in meeting time deadlines and professional production values required by productions scheduled for public distribution
5. Practice specialized individual production skills which will meet media workforce standards
6. Discuss current media production technologies and issues

Music

MUS 101 - Music Fundamentals

3 Credit(s)

This course provides the student an opportunity to develop a working knowledge of the elements of music. Students learn the basic skills needed to read, write, analyze, and compose simple music.

Prerequisite/Corequisite: Recommend MUS 131 Group Piano or MUS 137 Group Guitar be taken concurrently

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Identify and demonstrate knowledge of fundamental elements of music theory in treble and bass clef including pitches, key signatures, and time signatures
2. Demonstrate ability to read and notate simple rhythms
3. Identify and demonstrate knowledge of scales, triads, seventh chords, and simple chord progressions

MUS 103 - Songwriting Techniques and Analysis 1

3 Credit(s)

Explores the art and craft of songwriting. Students will analyze popular songs from a variety of sources including British Invasion, Rock, Country, Reggae, Rap, and Blues. Analysis will include keys, harmonies, song forms, melodic construction, phrasing, settings of lyrics. Recordings and scores will be used as reference materials for all analysis projects. Using the techniques and concepts gleaned through this analysis, the students will then create their own songs or develop more refined song analysis techniques.

Learning Outcomes

Upon successful completion of the course, students will be able to:

1. Develop a concept for artistic and well-crafted songs including melodies, lyrics, chords, and form
2. Demonstrate ability to read and create lead sheets for songs
3. Develop an ethical and aesthetic awareness for one's songwriting process
4. Demonstrate ability to communicate ideas about songwriting using appropriate terminology

MUS 107 - Audio Engineering 1

3 Credit(s)

Designed to train students seeking the tools to work and function as recording engineers in a recording environment. Students will meet with the instructor in the recording studio. Topics addressed and demonstrated include: sound and hearing, studio acoustics, microphone choice and positioning, mixing board, recording technology, tracking, audio editing, signal processing, monitoring, mixing, mastering, work flow, and professionalism.

Prerequisite: MUS 101 and MUS 119

Learning Outcomes

Upon successful completion of this course the student should be able to:

1. Demonstrate knowledge of the vocabulary and concepts of Audio Engineering at a basic level
2. Demonstrate knowledge of acoustics and human hearing at a basic level
3. Demonstrate knowledge and practical use of audio equipment, microphones, computers and file management as relates to the course at a basic level
4. Demonstrate knowledge of mixing techniques, session procedures and work flow at a basic level

MUS 109 - Audio Engineering 2

4 Credit(s)

Designed to train students seeking the tools to work and function as recording engineers in a recording environment. Students will meet with the instructor in the recording studio and will have hands-on assignments using studio equipment. Topics covered include: outboard mic preamps and signal processors, signal flow and setting up various signal paths within the control room, microphone placement and basic multitrack recording of various instruments, using the mixing console, and tracking to different mediums.

Prerequisite: MUS 107

Learning Outcomes

Upon successful completion of the course, students should be able to:

1. Demonstrate knowledge of the vocabulary and concepts of Audio Engineering at an intermediate level (CLO 1.1. 3.3)
2. Demonstrate knowledge of acoustics and human hearing at an intermediate level
3. Demonstrate knowledge and practical use of audio equipment, microphones, computers and file management as relates to the course at an intermediate level (
4. Demonstrate application of mixing techniques, session procedures and work flow at an intermediate level

MUS 110 - Audio Engineering 3

4 Credit(s)

Designed to train students seeking the tools to work and function as recording engineers in a recording environment. Students will meet with the instructor in the recording studio and work on a large-scale recording project. Topics include: studio etiquette, studio preparation, selecting a recording format, rehearsal sessions, console logistics, initial tracking, overdubbing, compression techniques, EQ techniques, signal processing, console automation, mixing, and mastering.

Prerequisite: MUS 109

Learning Outcomes

Upon successful completion of the course, students should be able to:

1. Demonstrate knowledge and practical use of audio equipment, microphones, computers and file management as relates to the course at an advanced level (
2. Demonstrate application of mixing techniques, session procedures and work flow at an advanced level
3. Demonstrate an ability to work cooperatively and efficiently as part of a professional level audio production team
4. Demonstrate knowledge and application of mastering techniques at a basic level

MUS 111 - Music Theory 1 (First Term)

4 Credit(s)

Thorough review of the fundamentals of music followed by their application to melody, harmony, and rhythm through analysis and composition. Emphasis on fluency of key signatures, scales, rhythm, intervals, triads and 7th chords, individually and in context, as well as 1st species modal and tonal counterpoint. Designed to be taken with MUS 114 and MUS 127 concurrently.

Prerequisite: Theory placement test required

Corequisite: MUS 114 and MUS 127

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Identify and demonstrate knowledge of essential elements of music theory
2. Realize chords from a given figured bass for simple harmonic progressions at a basic level
3. Evaluate musical performances using appropriate terminology that relates to the class
4. Compose original music and have it performed in class

MUS 112 - Music Theory 1 (Second Term)

4 Credit(s)

Emphasis on tonal species counter point and tonal music in four-part context. Includes tonal functional harmony involving tonic and dominant harmonies, non-harmonic tones, scoring, figured bass and introduction of cadences. Designed to be taken with MUS 115 and MUS 128 concurrently.

Prerequisite: MUS 111

Corequisite: MUS 115 and MUS 128

Learning Outcomes

Upon successful completion of this course, students should be able to:

1. Demonstrate and apply knowledge of essential elements of music theory through part writing and analysis at a basic level
2. Realize chords from a given figured bass for simple harmonic progressions at an intermediate level
3. Evaluate musical performances using appropriate terminology that relates to the class
4. Compose original music and have it performed in class
5. Compose and analyze 1st - 5th species counterpoint

MUS 113 - Music Theory 1 (Third Term)

4 Credit(s)

Emphasis on concepts of prolongation and contextual analysis. Includes all diatonic chords, cadences, embellishing chords, melodic analysis, sequences, and secondary dominants. Designed to be taken with MUS 116 and MUS 129 concurrently.

Prerequisite: MUS 112

Corequisite: MUS 116 and MUS 129

Learning Outcomes

Upon successful completion of this course, students should be able to:

1. Demonstrate and apply knowledge of basic elements of music theory through part writing and analysis at an intermediate level
2. Realize chords from a given figured bass for simple harmonic progressions at an advanced level
3. Evaluate musical performances using appropriate terminology that relates to the class
4. Compose original music and have it performed in class
5. Identify formal structures in music through listening and analysis

MUS 114 - Sight-reading and Ear Training (First Term)

2 Credit(s)

Course develops the skills necessary to read melodies at sight and to notate melodies one hears. It includes study of rhythm and meter, tonality and modality (solfeggio) scales, triads and seventh chords, cadences, and conducting patterns. Designed to be taken with MUS 111 and MUS 127 concurrently.

Prerequisite: Theory placement test required

Corequisite: MUS 111 and MUS 127

Learning Outcomes

Upon successful completion of this course, students should be able to:

1. Demonstrate singing skills with accuracy for notes, scales, rhythms, and melodies at a basic level
2. Demonstrate singing skills with accuracy for simple rhythmic and melodic duets at a basic level (
3. Notate rhythms, melodies, and simple harmonic progressions with accuracy at a basic level (
4. Conduct basic patterns to facilitate learning rhythms and melodies in course
5. Identify, sing, and dictate intervals and chords at a basic level (
6. Identify and dictate simple diatonic progressions with accuracy at a basic level (

MUS 115 - Sight-reading and Ear Training (Second Term)

2 Credit(s)

Solidifies the singing and listening skills that focuses on tonic and dominant chords. Introduces harmony and melodies using pre-dominant chords, and practices rhythmic patterns involving further subdivisions. Exercises with topics such as intervals, chord identifications, cadences, borrowed rhythms, and minor tonalities are introduced. Designed to be taken with MUS 112 and MUS 128 concurrently.

Prerequisite: MUS 114

Corequisite: MUS 112 and MUS 128

Learning Outcomes

Upon successful completion of this course, students should be able to:

1. Demonstrate singing skills with accuracy for notes, scales, rhythms, and melodies at an intermediate level
2. Demonstrate singing skills with accuracy for simple rhythmic and melodic duets at an intermediate level
3. Notate rhythms, melodies, and simple harmonic progressions with accuracy at an intermediate level
4. Conduct basic patterns to facilitate learning rhythms and melodies in course
5. Identify, sing, and dictate intervals and chords at an intermediate level
6. Identify and dictate simple diatonic progressions with accuracy at an intermediate level

MUS 116 - Sight-reading and Ear Training (Third Term)

2 Credit(s)

Emphasis on exercises using all diatonic chords, complex rhythmic subdivisions, sequences, and non-chord tones. Basic understanding of secondary dominant chords is introduced. Designed to be taken with MUS 113 and MUS 129 concurrently.

Prerequisite: MUS 115

Corequisite: MUS 113 and MUS 129

Learning Outcomes

Upon successful completion of this course, students should be able to:

1. Demonstrate singing skills with accuracy for notes, scales, rhythms, and melodies at an upper intermediate level
2. Demonstrate singing skills with accuracy for simple rhythmic and melodic duets at an upper intermediate level
3. Notate rhythms, melodies, and simple harmonic progressions with accuracy at an upper intermediate level
4. Conduct basic patterns to facilitate learning rhythms and melodies in course
5. Identify, sing, and dictate intervals and chords at an upper intermediate level
6. Identify and dictate simple diatonic progressions with accuracy at an upper intermediate level (

MUS 118 - Music Technology MIDI/Audio 1

4 Credit(s)

Hands-on instruction in current applications of music technology in a comprehensive MIDI/audio studio. Students will learn to use various music production tools, MIDI sequencing, patch editing, digital audio recording, MIDI networking, digital effects devices and plug-ins, and both digital and analog mixing systems. Each student is assigned to one of the 20 MIDI/audio studios, where they will complete creative lab assignments. Students will work in the studios a minimum of 3 hours per week outside of class.

Learning Outcomes

Upon successful completion of this course, students should be able to:

1. Demonstrate basic knowledge of MIDI and its use in an electronic music studio
2. Demonstrate basic knowledge of the physics of sound
3. Demonstrate basic knowledge of microphone use and signal routing
4. Develop basic skills in use of DAWs and MIDI hardware through creative projects

MUS 119 - Music Technology MIDI/Audio 2

4 Credit(s)

Hands-on instruction in advanced techniques of music technology in a comprehensive MIDI/audio studio. Students will learn advanced applications of synthesizers, professional sound recording/editing software, MIDI networking, MIDI sequencing, digital effects, and both analog and digital mixing and mastering. Students will gain experience in syncing sound and music to digital videos. Students will also have the opportunity to work with many audio formats such as AIFF, WAV, MP3, and surround sound as they work on their sound event projects. Students will work in the studio a minimum of 3 hours per week outside of class.

Prerequisite: MUS 118

Learning Outcomes

Upon successful completion of the course, students should be able to:

1. Demonstrate intermediate knowledge of MIDI and its use in an electronic music studio
 2. Demonstrate intermediate knowledge of microphone use and signal routing
 3. Develop intermediate skills in use of DAWs and MIDI hardware through creative projects
 4. Demonstrate basic knowledge and practical use of MIDI and audio post-production for use with video
-

MUS 127 - Keyboard Skills 1 (First Term)

2 Credit(s)

Course develops piano skills essential for all music majors: performance of rhythmic patterns, scales & arpeggios, intervals, chord progressions (including cadences) with correct voice leading and resolution, harmonization, transposition, improvisation, realization of figured bass, sight-reading of 2-part piano texture. Designed to be taken with MUS 111 and MUS 114 concurrently.

Prerequisite: Theory placement test required

Corequisite: MUS 111 and MUS 114

Learning Outcomes

Upon successful completion of the course, students will be able to:

1. Demonstrate keyboarding skills with accuracy for notes, rhythms, scales, arpeggios and simple chord progressions including cadences at a basic level
 2. Demonstrate correct voice leading and resolution, harmonization, transposition, and improvisation at a basic level
 3. Sight read a simple 2 part piano texture at a basic level
-

MUS 128 - Keyboard Skills 1 (Second Term)

2 Credit(s)

Course develops piano skills essential for all music majors: performance of rhythmic patterns, scales & arpeggios, intervals, chord progressions (including cadences) with correct voice leading and resolution, harmonization, transposition, improvisation, realization of figured bass, sight-reading of 2-part piano texture. Designed to be taken with MUS 112 and MUS 115 concurrently.

Prerequisite: MUS 127

Corequisite: MUS 112 and MUS 115

Learning Outcomes

Upon successful completion of the course, students will be able to:

1. Demonstrate keyboarding skills with accuracy for notes, rhythms, scales, arpeggios and simple chord progressions including cadences at an intermediate level
 2. Demonstrate correct voice leading and resolution, harmonization, transposition, and improvisation at an intermediate level
 3. Demonstrate realization of simple figured bass and lead sheet notation at a basic level
 4. Sight read a simple 2 part piano texture at an intermediate level
-

MUS 129 - Keyboard Skills 1 (Third Term)

2 Credit(s)

Course develops piano skills essential for all music majors: performance of rhythmic patterns, scales & arpeggios, intervals, chord progressions (including cadences) with correct voice leading and resolution, harmonization, transposition, improvisation, realization of figured bass, sight-reading of 2-part piano texture. Designed to be taken with MUS 113 and MUS 116 concurrently.

Prerequisite: MUS 128

Corequisite: MUS 113 and MUS 116

Learning Outcomes

Upon successful completion of the course, students should be able to:

1. Demonstrate keyboarding skills with accuracy for notes, rhythms, scales, arpeggios and simple chord progressions including cadences at an upper intermediate level
 2. Demonstrate correct voice leading and resolution, harmonization, transposition, and improvisation at an upper intermediate level
 3. Demonstrate realization of simple figured bass and lead sheet notation at an intermediate level
 4. Sight read a simple 2 part piano texture at an upper intermediate level
-

MUS 131 - Group Piano

2 Credit(s)

This course is for students who are not music majors and are interested in learning to play piano or continuing their keyboard studies. The course provides group instruction covering principles of piano playing. Contents and expected learning proficiencies of this course vary from term to term. May be repeated up to 6 total credits.

Learning Outcomes

Upon successful completion of this course, students should be able to:

1. Demonstrate ability to read and play piano music of difficulty appropriate to skill level
 2. Demonstrate facility with simple scale patterns and chords using proper fingering and technique
 3. Demonstrate transposition and improvisational skills at a basic level
-

MUS 134 - Group Voice

2 Credit(s)

This class is designed to help students develop their voices for singing. They will be instructed individually and as a group in vocal techniques that will improve the quality of their voices. They will learn about diction, phrasing, dynamics, expression, posture, breath-control, and vocal resonance as well as the basic anatomy of singing. They will also learn how to cope with the fear of singing in front of others. No musical background is needed to take this class. Contents and expected learning proficiencies of this course vary from term to term. May be repeated up to 6 total credits.

Learning Outcomes

Upon successful completion of this course, students should be able to:

1. Demonstrate improved ability with vocal technique including control of pitch, color/texture, volume, expanded range, and control of air to the vocal line
 2. Demonstrate understanding of repertoire preparation, lyric diction, and character development and how these apply to performance
 3. Demonstrate an expanded musical and stylistic awareness of vocal repertoire and an improved concentration/control in performance
 4. Demonstrate ability to critically evaluate their singing and apply learning towards making improvements in music making
-

MUS 137 - Group Guitar

2 Credit(s)

Basic orientation to guitar techniques that encompass accompaniment and solo skills. Students will learn to read standard musical notation. A variety of strumming and finger-picking are taught to accompany singing. Student must have access to an acoustic guitar. May be repeated up to 6 total credits.

Learning Outcomes

Upon successful completion of this course, students should be able to:

1. Demonstrate familiarity with guitar terminology and maintenance
 2. Demonstrate ability to read guitar notation and play music of difficulty appropriate to skill level
 3. Demonstrate left hand and right hand guitar technique including chording skills, lead line playing, strumming and arpeggio patterns
 4. Demonstrate a working knowledge of transposition, chord identification, and chord progression at a basic level
-

MUS 138 - Group Guitar 2

2 Credit(s)

Intermediate level orientation to guitar techniques, including reading the whole neck above the fourth fret, that will encompass accompaniment and solo skills in a variety of styles. Intermediate level standard music reading. Student must have access to an acoustic guitar. Contents and expected learning proficiencies of this course vary from term to term. May be repeated up to 6 total credits.

Learning Outcomes

Upon successful completion of this course, students should be able to:

1. Demonstrate familiarity with guitar terminology and maintenance
2. Demonstrate ability to read guitar notation and play music of difficulty appropriate to skill level
3. Demonstrate left hand and right hand guitar technique including chording skills, lead line playing, strumming and arpeggio patterns
4. Demonstrate a working knowledge of transposition, chord identification, and chord progression at an intermediate level

MUS 161 - Jazz Improvisation: Instrumental

2 Credit(s)

Students will study elements of jazz harmony, jazz standards and classic recordings of jazz artists to build background and a platform for development of skills in jazz improvisation. Students should have considerable skill on their instrument and knowledge of major key signatures and major scales. May be repeated up to 12 total credits.

Learning Outcomes

Upon successful completion of this course, students should be able to:

1. Demonstrate knowledge of form, style, chord changes and related scales of music studied
2. Demonstrate improvement in the following: aural skills, phrase development, knowledge of chord structure, chord progression recognition, instrumental technique, and rhythmic control
3. Demonstrate a knowledge of jazz artists and jazz standards studied

MUS 201 - Exploring Music: Introduction to Music History

3 Credit(s)

This class covers the development of Western Music from its beginnings through modern times. It is an overview of styles and practices with a focus on what to listen for in music. A brief opening section on ethnomusicology helps define the thread that connects the music of world cultures. The focus of this class is on the Medieval, Renaissance, Baroque, and Classical Eras.

Learning Outcomes

Upon successful completion of this course, students should be able to:

1. Demonstrate knowledge of the basic elements of music as well as melody, harmony, rhythm, tempo, dynamics, texture, and orchestration (
2. Demonstrate knowledge of major composers, musical styles, and repertoire from the Medieval, Renaissance, and Baroque periods
3. Demonstrate knowledge of the outside influences on composers studied in course
4. Clarify and express personal perspectives with regard to course content

MUS 202 - Exploring Music: Introduction to Music History

3 Credit(s)

This class covers the development of Western Music from its beginnings through modern times. It is an overview of styles and practices with a focus on what to listen for in music. A brief opening section on ethnomusicology helps define the thread that connects the music of world cultures. The course looks briefly at some music in the Eighteenth Century; however, the main focus of this class is on the Romantic Era and the origins and rise of Opera through the Romantic Era.

Learning Outcomes

Upon successful completion of this course, students should be able to:

1. Demonstrate knowledge of the basic elements of music as well as melody, harmony, rhythm, tempo, dynamics, texture and orchestration
2. Demonstrate knowledge of major composers, musical styles, and repertoire from the Classical and Romantic periods
3. Demonstrate knowledge of the outside influences on composers studied in course
4. Clarify and express personal perspectives with regard to course content

MUS 203 - Exploring Music: Introduction to Music History

3 Credit(s)

This class covers the development of Western Music from its beginnings through modern times. It is an overview of styles and practices with a focus on what to listen for in music. A brief opening section on ethnomusicology helps define the thread that connects the music of world cultures. Enjoyment of music through understanding is the primary emphasis. The class looks at some music at the end of the Nineteenth Century; however, the main focus of this class is on music of the Twentieth and Twenty-first Centuries.

Learning Outcomes

Upon successful completion of this course, students should be able to:

1. Demonstrate knowledge of the basic elements of music as well as melody, harmony, rhythm, tempo, dynamics, texture and orchestration
2. Demonstrate knowledge of major composers, musical styles, and repertoire from the late Romantic period, Twentieth Century, and Twenty-first Century
3. Demonstrate knowledge of the outside influences on composers studied in course
4. Clarify and express personal perspectives with regard to course content

MUS 205 - Introduction to Jazz History

3 Credit(s)

This course provides the student with listening skills and a historical overview of jazz from its origins to the present. Emphasis is on in-class listening and discussion of the music. No musical background is needed to take this class.

Learning Outcomes

Upon successful completion of this course, students should be able to:

1. Demonstrate knowledge of essential elements of jazz performance
2. Demonstrate ability to discuss and critique recorded and "live" jazz performances
3. Demonstrate knowledge of the main style-periods of jazz history and the contributions of the most important innovators of jazz
4. Demonstrate knowledge of the roles of African American culture in jazz.

MUS 211 - Music Theory 2: (First Term)

3 Credit(s)

Further studies of compositional techniques in tonal harmony. Emphasis is on chromaticism and analysis. Includes altered chords (N6 and augmented sixths chords), modal mixture and diatonic modulation. Designed to be taken with MUS 214 and MUS 224 concurrently.

Prerequisite: MUS 113, MUS 116, and MUS 129

Corequisite: MUS 214 and MUS 224

Learning Outcomes

Upon successful completion of this course, students should be able to:

1. Demonstrate and apply knowledge of complex elements of music theory through part writing and analysis at a basic level
2. Realize chords from a given figured bass for complex harmonic progressions at a basic level
3. Analyze the form and structure of music involving chromatic harmony through listening and analysis

MUS 212 - Music Theory 2 (Second Term)

3 Credit(s)

Course focuses on chromatic elaboration and enharmonic modulation using fully diminished seventh chords, augmented 6ths and Mm 7ths. Emphasis is on form and analysis including binary, ternary, rondo, variations, art song, and sonata form. Designed to be taken with MUS 215 and MUS 225 concurrently.

Prerequisite: MUS 211

Corequisite: MUS 215 and MUS 225

Learning Outcomes

Upon successful completion of this course, students should be able to:

1. Demonstrate and apply knowledge of complex elements of music theory through part writing and analysis at an intermediate level
2. Realize chords from a given figured bass for complex harmonic progressions at an intermediate level
3. Analyze the form and structure of music involving chromatic harmony through listening and analysis

MUS 213 - Music Theory 2 (Third Term)

3 Credit(s)

Emphasis is on musical language of the 20th century, including modes, atonality, serialism, set theory, new forms and new organizations of rhythm and meter.

Prerequisite: MUS 212

Corequisite: MUS 216 and MUS 226

Learning Outcomes

Upon successful completion of this course, students should be able to:

1. Demonstrate and apply knowledge of complex elements of music theory through part writing and analysis at an advanced level
 2. Realize chords from a given figured bass for complex harmonic progressions at an advanced level
 3. Analyze the form and structure of music involving chromatic harmony through listening and analysis
 4. Analyze the form and structure of non tonal and atonal music
-

MUS 214 - Keyboard Skills 2 (First Term)

2 Credit(s)

Course develops piano skills essential for all music majors. Keyboard Skills 2 focuses on chromatic harmony. Skills include the performance of scales and arpeggios, chord progressions with modulations (including altered chords) with corrective voice leading and resolution, harmonization, transposition, improvisation, realization of figured bass, sight-reading of two-part piano texture. Designed to be taken with MUS 211 and MUS 224 concurrently.

Prerequisite: MUS 113, MUS 116, and MUS 129

Corequisite: MUS 211 and MUS 224

Learning Outcomes

Upon successful completion of the course, students should be able to:

1. Demonstrate keyboarding skills with accuracy for all major and minor scales using both hands together (CLO 1.2, 5.2, 5.3)
 2. Demonstrate correct voice leading and resolution, harmonization, and use of a variety of cadences in complex chord progressions that modulate at a basic level (CLO 1.3, 1.5, 3.1, 5.1)
 3. Demonstrate realization of complex figured bass and lead sheet notation at a basic level (CLO 1.2, 1.5, 3.1, 5.3)
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MUS 215 - Keyboard Skills 2 (Second Term)

2 Credit(s)

Course develops piano skills essential for all music majors. Keyboard Skills 2 focuses on chromatic harmony. Skills include the performance of scales and arpeggios, chord progressions with modulations (including altered chords) with corrective voice leading and resolution, harmonization, transposition, improvisation, realization of figured bass, sight-reading of two-part piano texture. Designed to be taken with MUS 212 and MUS 225 concurrently.

Prerequisite: MUS 214

Corequisite: MUS 212 and MUS 225

Learning Outcomes

Upon successful completion of the course, students should be able to:

1. Demonstrate keyboarding skills with accuracy for all major and minor scales and arpeggios using both hands together
 2. Demonstrate correct voice leading and resolution, harmonization, and use of a variety of cadences in complex chord progressions that modulate at an intermediate level
 3. Demonstrate realization of complex figured bass and lead sheet notation at an intermediate level
-

MUS 216 - Keyboard Skills 2 (Third Term)

2 Credit(s)

Course develops piano skills essential for all music majors. Keyboard Skills 2 focuses on chromatic harmony. Skills include the performance of scales and arpeggios, chord progressions with chromatic and enharmonic modulations (including altered chords) with corrective voice leading and resolution, harmonization, transposition, improvisation, realization of figured bass, sight-reading of two-part piano texture. Designed to be taken with MUS 213 and MUS 226 concurrently.

Prerequisite: MUS 215

Corequisite: MUS 213 and MUS 226

Learning Outcomes

Upon successful completion of the course, students should be able to:

1. Demonstrate keyboarding skills with accuracy for modal and symmetrical scales

2. Demonstrate correct voice leading and resolution, harmonization, and use of a variety of cadences in complex chord progressions that modulate at an advanced level
 3. Demonstrate realization of complex figured bass and lead sheet notation at an advanced level
 4. Demonstrate ability to perform piano repertoire relevant to course curriculum at a basic level
 5. Demonstrate ability to accompany melodies/songs in various keys at a basic level
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MUS 224 - Sight-reading and Ear Training (First Term)

2 Credit(s)

Course solidifies the knowledge of diatonic harmony and melody in both singing and dictation. In addition, it introduces chromatic harmonies involving secondary dominant chords and modulations to closely related keys. Designed to be taken with MUS 211 and MUS 214 concurrently.

Prerequisite: MUS 113, MUS 116, MUS 129

Corequisite: MUS 211 and MUS 214

Learning Outcomes

Upon successful completion of this course, students should be able to:

1. Demonstrate singing skills with accuracy for complex rhythmic and chromatic melodic material at a basic level
 2. Demonstrate singing skills with accuracy for complex rhythmic and melodic duets at a basic level
 3. Notate complex rhythms, melodies, and chromatic harmonic progressions with accuracy at a basic level
 4. Conduct basic patterns to facilitate learning complex rhythms and melodies in course
 5. Identify and sing intervals and chromatic chords with accuracy at a basic level
 6. Identify and dictate chromatic diatonic progressions with accuracy at a basic level
-

MUS 225 - Sight-reading and Ear Training (Second Term)

2 Credit(s)

Course continues to solidify an understanding of secondary dominant harmonies while teaching students how to begin to identify various compositional forms by ear. Students practice singing, conducting, and dictation exercises written in asymmetrical meters, as well as hemiolas, modal mixture, Neapolitan 6th chords, and augmented 6th chords. Further work on modulations to closely related keys are discussed and practiced while modulations to remote keys are introduced. Designed to be taken with MUS 212 and MUS 215 concurrently.

Prerequisite: MUS 224

Corequisite: MUS 212 and MUS 215

Learning Outcomes

Upon successful completion of this course, students should be able to:

1. Demonstrate singing skills with accuracy for complex rhythmic and chromatic melodic material at an intermediate level
 2. Demonstrate singing skills with accuracy for complex rhythmic and melodic duets at an intermediate level
 3. Notate complex rhythms, melodies, and chromatic harmonic progressions with accuracy at an intermediate level
 4. Conduct basic patterns to facilitate learning complex rhythms and melodies in course
 5. Identify and sing intervals and chromatic chords with accuracy at an intermediate level
 6. Identify and dictate chromatic diatonic progressions with accuracy at an intermediate level
 7. Identify formal structures in music through listening and analysis
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MUS 226 - Sight-reading and Ear Training (Third Term)

2 Credit(s)

Course encapsulates the students' understanding of both tonal and chromatic harmony, and focuses on the concept of remote modulation. Introduces strategies for singing and hearing atonal and modal music. Designed to be taken with MUS 213 and MUS 216 concurrently.

Prerequisite: MUS 225

Corequisite: MUS 213 and MUS 216

Learning Outcomes

Upon successful completion of this course, students should be able to:

1. Demonstrate singing skills with accuracy for complex rhythmic and chromatic melodic material at an advanced level

2. Demonstrate singing skills with accuracy for complex rhythmic and melodic duets at an advanced level
3. Notate complex rhythms, melodies, and chromatic harmonic progressions with accuracy at an advanced level
4. Conduct basic patterns to facilitate learning complex rhythms and melodies in course
5. Identify and sing intervals and chromatic chords with accuracy at an advanced level
6. Identify and dictate chromatic diatonic progressions with accuracy at an advanced level
7. Demonstrate dictation and singing skills with accuracy for atonal melodies
8. Synthesize accumulative knowledge from previous terms in analysis and application of course content

MUS 260 - History of Hip-hop and Rap Music

3 Credit(s)

Explores the musical, social and cultural aspects of hip-hop and rap music from its birth in the 1970's to its development through today, while learning about important artists in this style. We will identify and analyze complex practices, values and beliefs and the cultural and historically defined meanings of difference in the hip-hop world and explore how culturally-based assumptions influence perceptions related to hip-hop culture and rap music. We will explore how these culturally-based assumptions influence perceptions and stigmas relating to hip-hop culture and compare/contrast attitudes and values of specific eras of this culture. We will analyze pertinent artists, events and landmark recordings in this process.

Learning Outcomes

Upon completion of this course the student should be able to:

1. Demonstrate ability to identify rap music and its subgenres by stylistic traits and key contributions of most significant hip-hop and rap artists
2. Demonstrate an understanding of hip-hop and rap music history and its relationship to society from its birth in the mid 1970's through today
3. Identify, evaluate and study the roles of African American culture in hip-hop and rap music
4. Describe the impact of hip-hop culture and rap music on individuals, local communities, the United States and the world as a whole

MUS 264 - Roots of Rock (Roots-1963)

4 Credit(s)

Explores the musical, social and cultural aspects of Rock music from its pre-Rock influences and its development through c.1963, while learning about important artists in this style.

Learning Outcomes

Upon successful completion of this course, students should be able to:

1. Demonstrate knowledge of essential elements of rock performance
2. Demonstrate ability to discuss and critique recorded and "live" rock performances
3. Demonstrate knowledge of the main styles of Early Rock (Roots - 1963) and the contributions of the most important innovators of Early Rock
4. Demonstrate knowledge of the role of the music industry in early rock
5. Demonstrate knowledge of social and cultural events concurrent with the history of Rock music

MUS 265 - Golden Age of Rock & Roll (1964-1974)

4 Credit(s)

Explores the musical, social and cultural aspects of Rock music from its pre-Rock influences and its development through 1964 -1974, while learning about important artists in this style.

Learning Outcomes

Upon successful completion of this course, students should be able to:

1. Demonstrate knowledge of essential elements of rock performance
2. Demonstrate ability to discuss and critique recorded and "live" rock performances
3. Demonstrate knowledge of the main styles of the Golden Age of Rock (1964 - 1973) and the contributions of the most important innovators of the Golden Age of Rock
4. Demonstrate knowledge of the changes within the music industry during the Golden Age of Rock
5. Demonstrate knowledge of social and cultural events concurrent with the history of Rock music

MUS 266 - Rockin' the New Millennium (1974-2006)

4 Credit(s)

Explores the musical, social and cultural aspects of rock music from c. 1974 through 2006, while learning about important artists in this style.

Learning Outcomes

Upon successful completion of the course, students will be able to:

1. Demonstrate knowledge of essential elements of rock performance
2. Demonstrate ability to discuss and critique recorded and "live" rock performance
3. Demonstrate knowledge of the main styles of Modern/Post Modern Rock. (1973 - 2004) and the contributions of the most important innovators of Modern/Post Modern Rock
4. Demonstrate knowledge of the mass media in Modern/Post Modern rock music
5. Demonstrate knowledge of social and cultural events concurrent with the history of Rock music

MUS 268 - History of Electronic Music

3 Credit(s)

A survey of electronic music history: the origin of electronic music, early musical instruments, tape music, musique concrete, computer music, digital synthesis, birth of MIDI, sampling, synth pop, disco, sound art, the EDM (Electronic Dance Music) era, and live electronics. We will identify and analyze electronic music works by major composers, groups, and bands. We will explore fundamental ideas and practices applied throughout the history of electronic music, such as tape music editing, synthesis techniques, sampling techniques and the development of the DAW system. We will also explore how electronic music is placed in other media, such as: video games, film scoring, television, theatrical productions, orchestral scores, multi-media performances, and live performance. We will also discuss the impact of electronic music in the United States and in other countries globally.

Learning Outcomes

Upon successful completion of this course, students should be able to:

1. Demonstrate ability to identify major composers, compositions, and styles in the field of electronic music
2. Demonstrate knowledge of major events related to the history of electronic music as well as key aspects of various cultures and societies as they relate to this history
3. Demonstrate knowledge of the role electronic music plays in other media

MUS 291 - Chamber Choir

2 Credit(s)

This is a select vocal ensemble that rehearses and performs choral chamber music from the medieval period to the present. Audition during first week of class. Students need to be able to read music. Contents and expected learning proficiencies of this course vary from term to term. May be repeated up to 12 total credits.

Prerequisite: Must be able to read music. Audition required.

Learning Outcomes

Upon successful completion of this course, students should be able to:

1. Demonstrate knowledge of repertoire studied
2. Demonstrate improvement in the following: vocal technique, auditory skills, sight reading, musicianship and ensemble singing in various styles and periods of music
3. Demonstrate awareness of the practical and logistical considerations of performance
4. Demonstrate individual readiness and participation during warmup, rehearsal and performance
5. Demonstrate high regard for team building/leadership skills including: promptness, rehearsal decorum, regard for other players, part preparation, and care of sheet music

MUS 293 - Jazz Combos

2 Credit(s)

For instrumentalists wishing to study jazz styles in a small group (combo) setting. Students form several small ensembles combos of up to seven players to study jazz standards from the Real Book and other jazz "fake books". Emphasis is placed on performance styles as well as fundamentals/elements of jazz theory as they relate to harmonic form and improvisation and listening. Contents and expected learning proficiencies of this course vary from term to term. May be repeated up to 12 total credits.

Prerequisite: Recommend ability to read music or concurrent enrollment in MUS 101

Learning Outcomes

Upon successful completion of this course, students should be able to:

1. Perform competently on voice/instrument within a small jazz ensemble
2. Demonstrate the basic skills of instrumental jazz improvisation and accompaniment within the various forms of the jazz music repertoire, particularly the "lead sheet" format
3. Demonstrate understanding of chord symbols, how they relate to jazz scales/modes and how to communicate with other jazz musicians using "short-hand" of chord terminology
4. Demonstrate an understanding of the basic rhythmic, harmonic, and melodic role played by each member of a small jazz ensemble, and how to best support and enhance these roles

MUS 294 - Jazz Ensemble

2 Credit(s)

Jazz Ensemble is a class for students who wish to study jazz music in a performance environment. This course blends the talents of experienced community instrumentalists with student musicians creating an excellent ensemble experience for all. The class is limited to five saxophones, five trumpets, five trombones, piano, bass, guitar, and trap set. Audition required. The Lane Jazz Ensemble performs formal concerts on and off campus throughout the year (Fall, Winter, Spring). Contents and expected learning proficiencies of this course vary from term to term. May be repeated up to 12 total credits.

Prerequisite: Audition required.

Learning Outcomes

Upon successful completion of this course, students should be able to:

1. Demonstrate knowledge of repertoire studied (CLO 1.2, 1.3, 4.2)
2. Demonstrate improvement in the following: interpretation of jazz articulations, aural skills, dynamics, phrasing, rhythmic control, musicianship and ensemble playing within section and larger ensemble (CLO 4.2, 5.2)
3. Demonstrate awareness of the practical and logistical considerations of performance (CLO 2.5)
4. Demonstrate individual readiness and participation during warmup, rehearsal and performance (CLO 2.5)
5. Demonstrate high regard for team building/leadership skills including: promptness, rehearsal decorum, regard for other players, part preparation, and care of instrument and sheet music (CLO 2.1, 2.5, 3.6)

MUS 295 - Symphonic Band

2 Credit(s)

Woodwind, brass, and percussion students will study, rehearse, and perform all types of concert band literature. This course blends the talents of experienced community instrumentalists with student musicians creating an excellent ensemble experience for all. The Lane Symphonic band performs at least one formal concert during the term. Contents and expected learning proficiencies of this course vary from term to term. May be repeated up to 12 total credits.

Prerequisite: Recommend audition and prior ensemble experience.

Learning Outcomes

Upon successful completion of this course, students should be able to:

1. Demonstrate knowledge of repertoire studied (CLO 1.2, 1.3, 4.2)
2. Demonstrate improvement in the following: tone production, intonation, technique/ articulation, dynamics, phrasing, rhythmic control, musicianship and ensemble playing within section and larger ensemble (CLO 4.2, 5.2)
3. Demonstrate awareness of the practical and logistical considerations of performance (CLO 2.5)
4. Demonstrate individual readiness and participation during warmup, rehearsal and performance (CLO 2.5)
5. Demonstrate high regard for team building/leadership skills including: promptness, rehearsal decorum, regard for other players, part preparation, and care of instrument and sheet music (CLO 2.1, 2.5, 3.6)

MUS 297 - Concert Choir

2 Credit(s)

Open to anyone interested in singing in a large ensemble. Students develop their vocal skills and learn music of various periods and styles in preparation for at least one public performance each term. Contents and expected learning proficiencies of this course vary from term to term. May be repeated up to 12 total credits.

Prerequisite: Ability to match pitch.

Learning Outcomes

Upon successful completion of this course, students should be able to:

1. Demonstrate knowledge of repertoire studied

2. Demonstrate improvement in the following: vocal technique, auditory skills, musicianship and ensemble singing in various styles and periods of music
3. Demonstrate awareness of the practical and logistical considerations of performance
4. Demonstrate individual readiness and participation during warmup, rehearsal and performance
5. Demonstrate high regard for team building/leadership skills including: promptness, rehearsal decorum, regard for other players, part preparation, and care of sheet music

Music Performance

MUP 100 - Individual Lessons

1 Credit(s)

Individual instruction in technical and stylistic aspects of solo performance for pre- and non-majors. Instruction is available in Piano, Voice, Guitar, Electric Bass Guitar, Violin, Viola, Cello, String Bass, Flute, Oboe, Clarinet, Bassoon, Saxophone, French Horn, Trumpet, Trombone, Euphonium, Tuba, Percussion, Drum Set, Composition and Music Technology. Students receive up to ten 50-min lessons each term. Contents and expected learning proficiencies vary each term. May be repeated up to 6 times.

Prerequisite: Instructor Approval or have taken the course within the past year

Learning Outcomes

Upon successful completion of this course, students should be able to:

1. Demonstrate ability to meet individualized musical and technical objectives as assigned by instructor at a basic level

MUP 171 - Individual Lessons: Piano (First-year level)

1 Credit(s)

Individual instruction in technical and stylistic aspects of solo performance. Students receive ten 50-min lessons each term. Regular practice outside of lessons expected. A music jury at the end of the term is required. Contents and expected learning proficiencies vary each term according to the level of individual proficiency and experience. May be repeated up to 12 total credits.

Prerequisite: Jury required to enter this level.

Learning Outcomes

Upon successful completion of the course, students will be able to:

1. Demonstrate ability to meet individualized musical and technical objectives assigned by instructor at an intermediate level (MUP 101- MUP 199)
2. Demonstrate ability to perform a jury at an intermediate level (MUP 101- MUP 199) according to appropriate guidelines

MUP 174 - Individual Lessons: Voice (First-year level)

1 Credit(s)

Individual instruction in technical and stylistic aspects of solo performance. Students receive ten 50-min lessons each term. Regular practice outside of lessons expected. A music jury at the end of the term is required. Contents and expected learning proficiencies vary each term according to the level of individual proficiency and experience. May be repeated up to 12 total credits.

Prerequisite: Jury required to enter this level

Learning Outcomes

Upon successful completion of the course, students will be able to:

1. Demonstrate ability to meet individualized musical and technical objectives assigned by instructor at an intermediate level (MUP 101- MUP 199)
2. Demonstrate ability to perform a jury at an intermediate level (MUP 101- MUP 199) according to appropriate guidelines

MUP 175 - Individual Lessons: Violin (First-year level)

1 Credit(s)

Individual instruction in technical and stylistic aspects of solo performance. Students receive ten 50-min lessons each term. Regular practice outside of lessons expected. A music jury at the end of the term is required. Contents and expected learning proficiencies vary each term according to the level of individual proficiency and experience. May be repeated up to 12 total credits.

Prerequisite: Jury required to enter this level

Learning Outcomes

Upon successful completion of the course, students will be able to:

1. Demonstrate ability to meet individualized musical and technical objectives assigned by instructor at an intermediate level (MUP 101- MUP 199)
2. Demonstrate ability to perform a jury at an intermediate level (MUP 101- MUP 199) according to appropriate guidelines

MUP 176 - Individual Lessons: Viola (First-year level)

1 Credit(s)

Individual instruction in technical and stylistic aspects of solo performance. Students receive ten 50-min lessons each term. Regular practice outside of lessons expected. A music jury at the end of the term is required. Contents and expected learning proficiencies vary each term according to the level of individual proficiency and experience. May be repeated up to 12 total credits.

Prerequisite: Jury required to enter this level

Learning Outcomes

Upon successful completion of the course, students will be able to:

1. Meet the individual objectives assigned by the instructor at the beginning of each term
2. Perform a jury according to the appropriate guidelines; scales, repertoire, sight-reading
3. Participate in a minimum of one showcase concert per year

MUP 177 - Individual Lessons: Cello (First-year level)

1 Credit(s)

Individual instruction in technical and stylistic aspects of solo performance. Students receive ten 50-min lessons each term. Regular practice outside of lessons expected. A music jury at the end of the term is required. Contents and expected learning proficiencies vary each term according to the level of individual proficiency and experience. May be repeated up to 12 total credits.

Prerequisite: Jury required to enter this level

Learning Outcomes

Upon successful completion of the course, students will be able to:

1. Meet the individual objectives assigned by the instructor at the beginning of each term
2. Perform a jury according to the appropriate guidelines; scales, repertoire, sight-reading
3. Participate in a minimum of one showcase concert per year

MUP 178 - Individual Lessons: Bass (First-year level)

1 Credit(s)

Individual instruction in technical and stylistic aspects of solo performance. Students receive ten 50-min lessons each term. Regular practice outside of lessons expected. A music jury at the end of the term is required. Contents and expected learning proficiencies vary each term according to the level of individual proficiency and experience. May be repeated up to 12 total credits.

Prerequisite: Jury required to enter this level

Learning Outcomes

Upon successful completion of the course, students will be able to:

1. Meet the individual objectives assigned by the instructor at the beginning of each term
2. Perform a jury according to the appropriate guidelines; scales, repertoire, sight-reading
3. Participate in a minimum of one showcase concert per year

MUP 181 - Individual Lessons: Flute (First-year level)

1 Credit(s)

Individual instruction in technical and stylistic aspects of solo performance. Students receive ten 50-min lessons each term. Regular practice outside of lessons expected. A music jury at the end of the term is required. Contents and expected learning proficiencies vary each term according to the level of individual proficiency and experience. May be repeated up to 12 total credits.

Prerequisite: Jury required to enter this level

Learning Outcomes

Upon successful completion of the course, students will be able to:

1. Meet the individual objectives assigned by the instructor at the beginning of each term
2. Perform a jury according to the appropriate guidelines; scales, repertoire, sight-reading
3. Participate in a minimum of one showcase concert per year

MUP 182 - Individual Lessons: Oboe (First-year level)

1 Credit(s)

Individual instruction in technical and stylistic aspects of solo performance. Students receive ten 50-min lessons each term. Regular practice outside of lessons expected. A music jury at the end of the term is required. Contents and expected learning proficiencies vary each term according to the level of individual proficiency and experience. May be repeated up to 12 total credits.

Prerequisite: Jury required to enter this level

Learning Outcomes

Upon successful completion of the course, students will be able to:

1. Demonstrate ability to meet individualized musical and technical objectives assigned by instructor at an intermediate level (MUP 101- MUP 199)
2. Demonstrate ability to perform a jury at an intermediate level (MUP 101- MUP 199) according to appropriate guidelines

MUP 183 - Individual Lessons: Clarinet (First-year level)

1 Credit(s)

Individual instruction in technical and stylistic aspects of solo performance. Students receive ten 50-min lessons each term. Regular practice outside of lessons expected. A music jury at the end of the term is required. Contents and expected learning proficiencies vary each term according to the level of individual proficiency and experience. May be repeated up to 12 total credits.

Prerequisite: Jury required to enter this level

Learning Outcomes

Upon successful completion of the course, students will be able to:

1. Demonstrate ability to meet individualized musical and technical objectives assigned by instructor at an intermediate level (MUP 101- MUP 199)
2. Demonstrate ability to perform a jury at an intermediate level (MUP 101- MUP 199) according to appropriate guidelines

MUP 184 - Individual Lessons: Saxophone (First-year level).

1 Credit(s)

Individual instruction in technical and stylistic aspects of solo performance. Students receive ten 50-min lessons each term. Regular practice outside of lessons expected. A music jury at the end of the term is required. Contents and expected learning proficiencies vary each term according to the level of individual proficiency and experience. May be repeated up to 12 total credits.

Prerequisite: Jury required to enter this level

Learning Outcomes

Upon successful completion of the course, students will be able to:

1. Demonstrate ability to meet individualized musical and technical objectives assigned by instructor at an intermediate level (MUP 101- MUP 199)
2. Demonstrate ability to perform a jury at an intermediate level (MUP 101- MUP 199) according to appropriate guidelines (

MUP 185 - Individual Lessons: Bassoon (First-year level)

1 Credit(s)

Individual instruction in technical and stylistic aspects of solo performance. Students receive ten 50-min lessons each term. Regular practice outside of lessons expected. A music jury at the end of the term is required. Contents and expected learning proficiencies vary each term according to the level of individual proficiency and experience. May be repeated up to 12 total credits.

Prerequisite: Jury required to enter this level

Learning Outcomes

Upon successful completion of the course, students will be able to:

1. Demonstrate ability to meet individualized musical and technical objectives assigned by instructor at an intermediate level (MUP 101- MUP 199)
2. Demonstrate ability to perform a jury at an intermediate level (MUP 101- MUP 199) according to appropriate guidelines

MUP 186 - Individual Lessons: Trumpet (First-year level)

1 Credit(s)

Individual instruction in technical and stylistic aspects of solo performance. Students receive ten 50-min lessons each term. Regular practice outside of lessons expected. A music jury at the end of the term is required. Contents and expected learning proficiencies vary each term according to the level of individual proficiency and experience. May be repeated up to 12 total credits.

Prerequisite: Jury required to enter this level

Learning Outcomes

Upon successful completion of the course, students will be able to:

1. Demonstrate ability to meet individualized musical and technical objectives assigned by instructor at an intermediate level (MUP 101- MUP 199)
2. Demonstrate ability to perform a jury at an intermediate level (MUP 101- MUP 199) according to appropriate guidelines

Prerequisite: Jury required to enter this level

Learning Outcomes

Upon successful completion of the course, students will be able to:

1. Meet the individual objectives assigned by the instructor at the beginning of each term
2. Perform a jury according to the appropriate guidelines; scales, repertoire, sight-reading
3. Participate in a minimum of two Showcase concerts per year

MUP 281 - Individual Lessons: Flute (Second-year level)

1 Credit(s)

Individual instruction in technical and stylistic aspects of solo performance. Students receive ten 50-min lessons each term. Regular practice outside of lessons expected. A music jury at the end of the term is required. Contents and expected learning proficiencies vary each term according to the level of individual proficiency and experience. May be repeated up to 12 total credits.

Prerequisite: Jury required to enter this level

Learning Outcomes

Upon successful completion of the course, students will be able to:

1. Meet the individual objectives assigned by the instructor at the beginning of each term
2. Perform a jury according to the appropriate guidelines; scales, repertoire, sight-reading
3. Participate in a minimum of two Showcase concerts per year

MUP 283 - Individual Lessons: Clarinet (Second-year level).

1 Credit(s)

Individual instruction in technical and stylistic aspects of solo performance. Students receive ten 50-min lessons each term. Regular practice outside of lessons expected. A music jury at the end of the term is required. Contents and expected learning proficiencies vary each term according to the level of individual proficiency and experience. May be repeated up to 12 total credits.

Prerequisite: Jury required to enter this level

Learning Outcomes

Upon successful completion of the course, students will be able to:

1. Demonstrate ability to meet individualized musical and technical objectives assigned by instructor at an upper intermediate level (MUP 200 - MUP 299)
2. Demonstrate ability to perform a jury at an upper intermediate level (MUP 200 - MUP 299) according to appropriate guidelines

MUP 284 - Individual Lessons: Saxophone (Second-year level)

1 Credit(s)

Individual instruction in technical and stylistic aspects of solo performance. Students receive ten 50-min lessons each term. Regular practice outside of lessons expected. A music jury at the end of the term is required. Contents and expected learning proficiencies vary each term according to the level of individual proficiency and experience. May be repeated up to 12 total credits.

Prerequisite: Jury required to enter this level

Learning Outcomes

Upon successful completion of the course, students will be able to:

1. Demonstrate ability to meet individualized musical and technical objectives assigned by instructor at an upper intermediate level (MUP 200 - MUP 299)
2. Demonstrate ability to perform a jury at an upper intermediate level (MUP 200 - MUP 299) according to appropriate guidelines

MUP 286 - Individual Lessons: Trumpet (Second-year level)

1 Credit(s)

Individual instruction in technical and stylistic aspects of solo performance. Students receive ten 50-min lessons each term. Regular practice outside of lessons expected. A music jury at the end of the term is required. Contents and expected learning proficiencies vary each term according to the level of individual proficiency and experience. May be repeated up to 12 total credits.

Prerequisite: Jury required to enter this level

Learning Outcomes

Upon successful completion of the course, students will be able to:

1. Demonstrate ability to meet individualized musical and technical objectives assigned by instructor at an upper intermediate level (MUP 200 - MUP 299)
2. Demonstrate ability to perform a jury at an upper intermediate level (MUP 200 - MUP 299) according to appropriate guidelines

MUP 287 - Individual Lessons: French Horn (Second-year level)

1 Credit(s)

Individual instruction in technical and stylistic aspects of solo performance. Students receive ten 50-min lessons each term. Regular practice outside of lessons expected. A music jury at the end of the term is required. Contents and expected learning proficiencies vary each term according to the level of individual proficiency and experience. May be repeated up to 12 total credits.

Prerequisite: Jury required to enter this level

Learning Outcomes

Upon successful completion of the course, students will be able to:

1. Meet the individual objectives assigned by the instructor at the beginning of each term
2. Perform a jury according to the appropriate guidelines; scales, repertoire, sight-reading
3. Participate in a minimum of two Showcase concerts per year

MUP 288 - Individual Lessons: Trombone (Second-year level)

1 Credit(s)

Individual instruction in technical and stylistic aspects of solo performance. Students receive ten 50-min lessons each term. Regular practice outside of lessons expected. A music jury at the end of the term is required. Contents and expected learning proficiencies vary each term according to the level of individual proficiency and experience. May be repeated up to 12 total credits.

Prerequisite: Jury required to enter this level

Learning Outcomes

Upon successful completion of the course, students will be able to:

1. Demonstrate ability to meet individualized musical and technical objectives assigned by instructor at an upper intermediate level (MUP 200 - MUP 299)
2. Demonstrate ability to perform a jury at an upper intermediate level (MUP 200 - MUP 299) according to appropriate guidelines

MUP 290 - Individual Lessons: Tuba (Second-year level)

1 Credit(s)

Individual instruction in technical and stylistic aspects of solo performance. Students receive ten 50-min lessons each term. Regular practice outside of lessons expected. A music jury at the end of the term is required. Contents and expected learning proficiencies vary each term according to the level of individual proficiency and experience. May be repeated up to 12 total credits.

Prerequisite: Jury required to enter this level

Learning Outcomes

Upon successful completion of the course, students will be able to:

1. Demonstrate ability to meet individualized musical and technical objectives assigned by instructor at an upper intermediate level (MUP 200 - MUP 299)
2. Demonstrate ability to perform a jury at an upper intermediate level (MUP 200 - MUP 299) according to appropriate guidelines

MUP 291 - Individual Lessons: Percussion (Second-year level)

1 Credit(s)

Individual instruction in technical and stylistic aspects of solo performance. Students receive ten 50-min lessons each term. Regular practice outside of lessons expected. A music jury at the end of the term is required. Contents and expected learning proficiencies vary each term according to the level of individual proficiency and experience. May be repeated up to 12 total credits.

Prerequisite: Jury required to enter this level

Learning Outcomes

Upon successful completion of the course, students will be able to:

1. Demonstrate ability to meet individualized musical and technical objectives assigned by instructor at an upper intermediate level (MUP 200 - MUP 299)
2. Demonstrate ability to perform a jury at an upper intermediate level (MUP 200 - MUP 299) according to appropriate guidelines

MUP 292 - Individual Lessons: Electric Bass (Second-year level)

1 Credit(s)

Individual instruction in technical and stylistic aspects of solo performance. Students receive ten 50-min lessons each term. Regular practice outside of lessons expected. A music jury at the end of the term is required. Contents and expected learning proficiencies vary each term according to the level of individual proficiency and experience. May be repeated up to 12 total credits.

Prerequisite: Jury required to enter this level

Learning Outcomes

Upon successful completion of the course, students will be able to:

1. Meet the individual objectives assigned by the instructor at the beginning of each term
2. Perform a jury according to the appropriate guidelines; scales, repertoire, sight-reading
3. Participate in a minimum of two Showcase concerts per year

MUP 294 - Individual Lessons: Guitar (Second-year level)

1 Credit(s)

Individual instruction in technical and stylistic aspects of solo performance.

Students receive ten 50-min lessons each term. Regular practice outside of lessons expected. A music jury at the end of the term is required. Contents and expected learning proficiencies vary each term according to the level of individual proficiency and experience. May be repeated up to 12 total credits.

Prerequisite: Jury required to enter this level

Learning Outcomes

Upon successful completion of the course, students will be able to:

1. Demonstrate ability to meet individualized musical and technical objectives assigned by instructor at an upper intermediate level (MUP 200 - MUP 299)
2. Demonstrate ability to perform a jury at an upper intermediate level (MUP 200 - MUP 299) according to appropriate guidelines

Nursing

NRS 110A - Foundations of Nursing-Health Promotion

4 Credit(s)

This course introduces the learner to framework of the OCNE curriculum. The emphasis is on health promotion across the life span includes learning about self-health as well as client health practices. To support self and client health practices, students learn to access research evidence about healthy lifestyle patterns and risk factors for disease/illness, apply growth and development theory, interview clients in a culturally-sensitive manner, work as members of a multidisciplinary team giving and receiving feedback about performance, and use reflective thinking about their practice as nursing students. The family experiencing a normal pregnancy is a major exemplar.

Prerequisite: BI 233 and BI 234 and FN 225 and PSY 215 and (WR 121 or WR 121_H) and (WR 122 or WR 122_H) and MTH 095 or higher with a grade of C or better.

Corequisite: NRS 110B.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Conduct a culturally and age appropriate health assessment, and interpret health data, such as screening for biological and psychosocial health risks, evidence of safe and healthy habits, developmental tasks and vulnerabilities, and patterns of family functioning.
2. Develop a plan of care that is family-centered, and developmentally and culturally appropriate using evidence such as clinical practice guidelines and integrative literature reviews, to help facilitate a client's health behavior change.
3. Use effective communication to establish a therapeutic client-centered relationship and advocate for a health behavior change based on assessment of health risks.
4. Design and evaluate a health behavior change for self and for a selected client using relevant evidence and family/cultural data.
5. Demonstrate beginning use of selected nursing frameworks, including the legal ethical base for practice, and their application to the practice of nursing.
6. Recognize the importance and relevance of reflection on clinical experiences and on competencies and its influence on personal and professional behavior.
7. Demonstrate use of the importance of fulfilling commitments to the team in timely completion of assignments.
8. Demonstrate use of effective learning strategies in a performance-based curriculum.

NRS 110B - Foundations of Nursing-Health Promotion Clinical Lab

5 Credit(s)

Clinical Lab required for NRS110A.

Corequisite: NRS 110A

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Conduct a culturally and age appropriate health assessment, and interpret health data, such as screening for biological and psychosocial health risks,

evidence of safe and healthy habits, developmental tasks and vulnerabilities, and patterns of family functioning

2. Develop a plan of care that is family-centered, and developmentally and culturally appropriate using evidence such as clinical practice guidelines and integrative literature reviews, to help facilitate a client's health behavior change
3. Use effective communication to establish a therapeutic client-centered relationship and advocate for a health behavior change based on assessment of health risks
4. Design and evaluate a health behavior change for self and for a selected client using relevant evidence and family/cultural data
5. Demonstrate beginning use of selected nursing frameworks, including the legal ethical base for practice, and their application to the practice of nursing
6. Recognize the importance and relevance of reflection on clinical experiences and on competencies and its influence on personal and professional behavior
7. Demonstrate use of the importance of fulfilling commitments to the team in timely completion of assignments
8. Demonstrate use of effective learning strategies in a performance-based curriculum

NRS 111A - Foundations of Nursing in Chronic Illness 1

2 Credit(s)

This course introduces assessment and common interventions (including technical procedures) for clients with chronic illnesses common across the life span in major ethnic groups within Oregon. The client and family' "lived experience" of the illness, coupled with clinical practice guidelines and extant research evidence is used to guide clinical judgments in care to the chronically ill. Roles of multidisciplinary team in care of the chronically ill, and legal aspects of delegations are explored. Through case scenarios, cultural, ethical, health policy, and health care delivery system issues are explored in the context of the chronic illness care. Case exemplars include children with asthma, adolescent with a mood disorder, adult-onset diabetes, and older adults with dementia.

Prerequisite: NRS 110A and NRS 110B with a grade of C or better

Corequisite: NRS 111B

Learning Outcomes

Upon successful completion of the course, the student should be able to:

1. Conduct a health assessment that is family-centered and both developmentally and culturally appropriate. Interpret resulting health data, focusing on: mental and functional status, ADLs and IADLs, coping/adaptive strategies used by client/family, lived experience of chronic illness, including recognition of stigma and its impact on vulnerable populations, and impact of illness on family functioning
2. Create and Implement a safe, effective, developmentally and culturally appropriate plan of care to clients with chronic illness including: safely and effectively assisting clients with ADLs & IADLs, addressing comfort needs (physical and emotional), teaching clients about self-assessment and self-management in conditions such as depression, general anxiety and chronic pain, and addressing basic questions about prognosis of illness
3. Develop and implement a family-centered plan of care for a client with a chronic illness that incorporates evidence-based intervention strategies, assessment data, child and family developmental considerations, and a deep understanding of the patient's perspective and illness experience within the framework of exacerbation, trajectory, and plateau
4. Identify roles and functions of members of the health care team, such as Case Management in order to provide care for the chronically ill
5. Use therapeutic communication skills in the development of therapeutic relationships with patients and families
6. Recognize potential legal and ethical issues related to client autonomy across the lifespan in at risk populations. Apply ANA Code of Ethics in the care of the chronically ill

NRS 111B - Foundations of Nursing in Chronic Illness 1- Clinical Lab

4 Credit(s)

Clinical Lab required for NRS111A.

Corequisite: NRS 111A.

Learning Outcomes

Upon successful completion of the course, the student should be able to:

1. Conduct a health assessment that is family-centered and both developmentally and culturally appropriate. Interpret resulting health data, focusing on: mental and functional status, ADLs and IADLs, coping/adaptive strategies used by client/family, lived experience of chronic illness, including recognition of stigma

and its impact on vulnerable populations, and impact of illness on family functioning

2. Provide safe and effective, developmentally and culturally appropriate care to clients with chronic illness including: safely and effectively assisting clients with ADLs & IADLs, addressing comfort needs (physical and emotional), teaching clients about self-assessment and self-management in conditions such as depression, general anxiety and chronic pain, and addressing basic questions about prognosis of illness
3. Develop and implement a family-centered plan of care for a client with a chronic illness that incorporates evidence-based intervention strategies, assessment data, child and family developmental considerations, and a deep understanding of the patient's perspective and illness experience within the framework of exacerbation, trajectory, and plateau
4. Identify roles and functions of members of the health care team in order to provide care for the chronically ill
5. Use therapeutic communication skills in the development of therapeutic relationships with patients and families
6. Recognize potential legal and ethical issues related to client autonomy across the lifespan in at risk populations. Apply ANA Code of Ethics in the care of the chronically ill

NRS 112A - Foundations of Nursing in Acute Care 1

2 Credit(s)

This course introduces the learner to assessment and common interventions (including relevant technical procedures) for care of patients across the life span who require acute care, including normal childbirth, disease/illness trajectories and their translation into clinical practice guidelines and/or standard procedures are considered in relation to their impact on providing culturally sensitive, client-centered care. Includes classroom and clinical learning experiences.

Prerequisite: NRS 111A /NRS 111B and (BI 101F or BI 101K or BI 102G or BI 112 or BI 211) with a grade of C or better

Corequisite: NRS 112B

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Conduct a culturally and age appropriate health assessment and interpret health data focusing on physiologic, developmental, and behavioral parameters of condition manifestation progression and resolution, and the client response to acute conditions/processes
2. Develop plans of care that are family-centered, developmentally and culturally appropriate, using evidence including clinical guidelines and integrative literature reviews to implement care plans safely for patients with common acute conditions/processes
3. Manage common symptoms such as acute pain and acute anxiety, follow evidence based procedures for performing skills safely, use expected illness trajectory; monitor progress toward recovery, occurrence of complications and client's response to interventions
4. Identify potential legal and ethical issues related to patient decision-making and informed consent in acute care settings. Apply ANA Code of Ethics to care of patients with acute conditions/processes
5. Use therapeutic communication skills in the development of therapeutic relationships with patients and families
6. Identify roles of health care team members involved in providing care to patients and families with acute conditions/processes
7. Discuss delegation needs for patient care with experienced nurses

NRS 112B - Foundations of Nursing in Acute Care 1 Clinical Lab

4 Credit(s)

Clinical Lab required for NRS112A.

Corequisite: NRS 112A

Learning Outcomes

Upon successful completion of the course, the student should be able to:

1. Conduct a culturally and age appropriate health assessment and interpret health data focusing on physiologic, developmental, and behavioral parameters of condition manifestation progression and resolution, and the client response to acute conditions/processes
2. Develop plans of care that are family-centered, developmentally and culturally appropriate, using evidence including clinical guidelines and integrative literature reviews to implement care plans safely for patients with common acute conditions/processes

3. Manage common symptoms such as acute pain and acute anxiety, follow evidence based procedures for performing skills safely, use expected illness trajectory; monitor progress toward recovery, occurrence of complications and client's response to interventions
4. Identify potential legal and ethical issues related to patient decision-making and informed consent in acute care settings. Apply ANA Code of Ethics to care of patients with acute conditions/processes
5. Use therapeutic communication skills in the development of therapeutic relationships with patients and families
6. Identify roles of health care team members involved in providing care to patients and families with acute conditions/processes
7. Discuss delegation needs for patient care with experienced nurses

NRS 115 - LPN Transition to OCNE

6 Credit(s)

This course will be taught in combination with NRS 112A Acute 1 theory course for 2 credits and NRS 112B Clinical for 4 credits. You will register for NRS 115 but you will be fully integrated into NRS 112. Please refer to the syllabi for NRS 112A/B for further information. NRS 112A/B introduces the learner to assessment and common interventions (including relevant technical procedures) for care of patients across the lifespan who require acute care, including normal childbirth. Disease/illness trajectories and their translation into clinical practice guidelines and/or standard procedures are considered in relation to their impact on providing culturally sensitive, client-centered care. Classroom and clinical learning experiences are included in meeting course outcomes.

Corequisite: NRS 231 and NRS 233

Learning Outcomes

Students who successfully complete this course will be able to:

1. Conduct a culturally and age appropriate health assessment and interpret health data focusing on physiologic, developmental, and behavioral parameters of condition manifestation progression and resolution, and the client response to acute conditions/processes
2. Develop plans of care that are family-centered, developmentally and culturally appropriate, using evidence including clinical guidelines and integrative literature reviews to implement care plans safely for patients with common acute conditions/processes
3. Manage common symptoms such as acute pain and acute anxiety, follow evidence based procedures for performing skills safely, use expected illness trajectory; monitor progress toward recovery, occurrence of complications and client's response to interventions
4. Identify potential legal and ethical issues related to patient decision-making and informed consent in acute care settings. Apply ANA Code of Ethics to care of patients with acute conditions/processes
5. Use therapeutic communication skills in the development of therapeutic relationships with patients and families
6. Identify roles of health care team members involved in providing care to patients and families with acute conditions/processes
7. Discuss delegation needs for patient care with experienced nurses

NRS 221A - Foundations of Nursing in Chronic Illness 2 and End of Life

4 Credit(s)

This course builds on Foundations of Nursing in Chronic Illness I. The evidence base related to family care giving and symptom management is a major focus and basis for nursing interventions with patients and families. Ethical issues related to advocacy, self determination, and autonomy is explored. Complex skills associated with symptom management, negotiating in interdisciplinary teams, and the impact of individual and family development cultural beliefs are included in the context of client and family centered care. Exemplars include patients with chronic mental illness and well as other chronic conditions and disabilities affecting functional status and family relationships.

Prerequisite: (BI 101F or BI 101K or BI 102G or BI 112 or BI 211) and (NRS 112A /NRS 112B or NRS 115) and NRS 230 and NRS 231 and NRS 232 and NRS 233 with a grade of C or better

Corequisite: NRS 221B

Learning Outcomes

Upon successful completion of the course, the student should be able to:

1. Conduct a health assessment that is in-depth, evidence-based, family-centered, and both developmentally and culturally appropriate Interpret health data, focusing on:
 - functional issues associated with complexities of co-morbid conditions in relation to ADL's and IADL's.

- manifestations of psychiatric diagnoses and their impact on client self-care
 - psychosocial issues and the impact of the illness on individual development and family function
 - the client's personal, social and cultural interpretation of the meaning of the illness and the impact on the client's family
 - capacity for and engagement in self care
 - opportunities for health behavior change
2. Develop and use evidence-based interventions, individualized to client and family needs, specifically to:
 - establish meaningful relationships with clients/families
 - support client and family in development of capacity for self-health care management
 - address caregiver needs for preparedness, predictability and enrichment
 - manage symptoms/manifestations for specific disorders
 3. Incorporate measures to enhance quality of life in the plan of care by:
 - facilitating client in personal definition of quality of life
 - addressing client needs for preparedness, predictability and enrichment
 4. Identify and use community resources to provide support for the client and family caregiving by:
 - supporting the client in negotiating the health care system
 - accessing appropriateness of resources in meeting the client/family needs, (e.g. accessibility, financial feasibility, acceptability)
 5. Communicate, as appropriate, with all agencies involved in patient care to assure continuity of care across settings (e.g. schools, day care, adult foster care, etc.) by:
 - negotiating with others to modify care
 - advocating for clients
 6. Support patients and families across the life-span who choose palliative care or are experiencing transitions at the end of life by:
 - negotiating with others to develop or modify patient care
 - describing the epidemiology of dying: where, when, how people die
 - dying trajectories across the lifespan
 - using developmentally and culturally appropriate communication with patients and families at EOL
 - using appropriate assessment techniques for individuals and families experiencing life threatening illness
 - assessing family capacity to provide care, care-giving strain, strengths, and resources
 7. Analyze impact of health care delivery system issues, policy and financing on individual and family care by:
 - comparing basic funding mechanisms for chronic illness
 - identifying decision-making issues for chronic care based on funding resources
 - accessing appropriateness of resources in meeting the client/family needs, (e.g. accessibility, financial feasibility, acceptability)
- establish meaningful relationships with clients/families
 - support client and family in development of capacity for self-health care management.
 - address caregiver needs for preparedness, predictability and enrichment.
 - manage symptoms/manifestations for specific disorders.
3. Incorporate measures to enhance quality of life in the plan of care by:
 - facilitating client in personal definition of quality of life.
 - addressing client needs for preparedness, predictability and enrichment.
 4. Identify and use community resources to provide support for the client and family caregiving by:
 - supporting the client in negotiating the health care system.
 - accessing appropriateness of resources in meeting the client/family needs, (e.g. accessibility, financial feasibility, acceptability).
 5. Communicate, as appropriate, with all agencies involved in patient care to assure continuity of care across settings (e.g. schools, day care, adult foster care, etc.) by:
 - negotiating with others to modify care.
 - advocating for clients.
 6. Support patients and families across the life-span who choose palliative care or are experiencing transitions at the end of life by:
 - negotiating with others to develop or modify patient care.
 - describing the epidemiology of dying: where, when, how people die.
 - dying trajectories across the lifespan.
 - using developmentally and culturally appropriate communication with patients and families at EOL.
 - using appropriate assessment techniques for individuals and families experiencing life threatening illness.
 - assessing family capacity to provide care, care-giving strain, strengths, and resources.
 7. Analyze impact of health care delivery system issues, policy and financing on individual and family care by:
 - comparing basic funding mechanisms for chronic illness.
 - identifying decision-making issues for chronic care based on funding resources.
 - accessing appropriateness of resources in meeting the client/family needs, (e.g. accessibility, financial feasibility, acceptability).

NRS 221B - Foundations of Nursing in Chronic Illness 2 and End-of-Life

Clinical Lab

5 Credit(s)

Clinical Lab required for NRS221A.

Corequisite: NRS 221A.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Conduct a health assessment that is in-depth, evidence-based, family-centered, and both developmentally and culturally appropriate Interpret health data, focusing on:
 - functional issues associated with complexities of co-morbid conditions in relation to ADL's and IADL's.
 - manifestations of psychiatric diagnoses and their impact on client self-care.
 - psychosocial issues and the impact of the illness on individual development and family function.
 - the client's personal, social and cultural interpretation of the meaning of the illness and the impact on the client's family.
 - capacity for and engagement in self care.
 - opportunities for health behavior change.
2. Develop and use evidence-based interventions, individualized to client and family needs, specifically to:

NRS 222A - Foundations of Nursing in Acute Care 2 and End-of-Life

4 Credit(s)

This course builds on Nursing in Acute Care I, focusing on more complex and/or unstable patient care situations, some of which require strong recognition skills, rapid decision making, and some of which may result in death. The evidence base supporting appropriate focused assessments, and effective efficient nursing interventions is explored. Life span and developmental factors, cultural variables, and legal aspects of care frame the ethical decision-making employed in patient choices for treatment or palliative care within the acute care setting. Case scenarios incorporate prioritizing care needs, delegation and supervision, family and patient teaching for discharge planning or end-of-life care. Exemplars include acute psychiatric disorders, pregnancy-related complications, as well as acute conditions affecting multiple body systems.

Prerequisite: NRS 221A and NRS 221B

Corequisite: NRS 222B

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Conduct evidence-based assessment, using age, developmental and culturally appropriate communication skills, specifically:
 - a. Monitors a variety of data and accurately interprets obvious deviations from expected patterns in increasingly complex acute conditions (e.g. co-morbidities, complications, high-risk pregnancies, life-threatening, diverse health beliefs)
 - b. Recognize potential problems and rapidly changing physiologic and behavioral situations
 - c. Recognizes pathophysiological changes and symptoms experienced by the client, which are associated with the dying process
 - d. Regularly monitors client's level of comfort and ability to manage symptoms and symptom distress

NRS 222B - Foundations of Nursing in Acute Care 2 and End-of-Life Clinical Lab

5 Credit(s)

Clinical Lab required for NRS222A.

Corequisite: NRS 222A

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Conduct evidence-based assessment, using age, developmental and culturally appropriate communication skills, specifically:
 - a. Monitors a variety of data and accurately interprets obvious deviations from expected patterns in increasingly complex acute conditions (e.g. comorbidities, complications, high-risk pregnancies, life-threatening, diverse health beliefs)
 - b. Recognize potential problems and rapidly changing physiologic and behavioral situations
 - c. Recognizes pathophysiological changes and symptoms experienced by the client, which are associated with the dying process
 - d. Regularly monitors client's level of comfort and ability to manage symptoms and symptom distress

NRS 224A - Integrative Practicum 1

2 Credit(s)

This course is designed to formalize the clinical judgments, knowledge and skills necessary in safe, registered nurse practice. The preceptor model provides a context that allows the student to experience the nursing work world in a selected setting, balancing the demands of job and life long learner.

Faculty/preceptor/student analysis and reflection throughout the experience provide the student with evaluative criteria against which they can judge their own performance and develop a practice framework. Required for AAS and eligibility for RN licensure.

Prerequisite: NRS 222A and NRS 222B

Corequisite: NRS 224B

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Make sound clinical judgments, based on increasingly complex knowledge base and experience in care selected populations
2. Set priorities in the provision of care with attention to client needs and available resources
3. Practice self-reflection and self-analysis and identify areas for improvement
4. Advocate for inclusion of client/family uniqueness in all aspects of care
5. Identify costs and benefits of resource options for client care
6. Regularly evaluate and augment own leadership in client and team situations in the selected population
7. Delegate to, and evaluate, others ensuring that the task is within their scope of practice
8. Access, evaluate and integrate new learning into practice
9. Identify a vision and influence others to share the vision to support quality of care
10. Demonstrate commitment to new and continuing learning opportunities, expanding repertoire of learning activities and experiences with other health care team members, especially those who hold different points of view
11. Demonstrate competent performance when evaluated against national standards and criteria accepted in selected populations and/or settings
12. Promote collaborative teamwork and empower others

NRS 224B - Integrative Practicum 1 Lab

7 Credit(s)

Clinical Lab required for NRS224A.

Corequisite: NRS 224A.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Make sound clinical judgments, based on increasingly complex knowledge base and experience in care selected populations.
2. Set priorities in the provision of care with attention to client needs and available resources.
3. Practice self-reflection and self-analysis and identify areas for improvement.
4. Advocate for inclusion of client/family uniqueness in all aspects of care.
5. Identify costs and benefits of resource options for client care.
6. Regularly evaluate and augment own leadership in client and team situations in the selected population.

7. Delegate to, and evaluate, others ensuring that the task is within their scope of practice.
8. Access, evaluate and integrate new learning into practice.
9. Identify a vision and influence others to share the vision to support quality of care.
10. Demonstrate commitment to new and continuing learning opportunities, expanding repertoire of learning activities and experiences with other health care team members, especially those who hold different points of view.
11. Demonstrate competent performance when evaluated against national standards and criteria accepted in selected populations and/or settings.
12. Promote collaborative teamwork and empower others.

NRS 230 - Clinical Pharmacology 1

3 Credit(s)

This course introduces the theoretical background that enables students to provide safe and effective care related to drugs and natural products to persons throughout the lifespan. Students will learn to make selected clinical decisions regarding using current, reliable sources of information, monitoring and evaluating the effectiveness of drug therapy, teaching persons from diverse populations regarding safe and effective use of drugs and natural products, intervening to increase therapeutic benefits and reduce potential negative effects, and communicating appropriately with other health professionals regarding drug therapy. Drugs are studied by therapeutic or pharmacological class using an organized framework.

Prerequisite: Admission in the Nursing Program.

Learning Outcomes

Upon successful completion of the course, the student should be able to:

1. Use current, reliable sources of information to access pertinent information about drugs and natural products, focusing on: identification of appropriate reliable sources of information in specific nursing situations, rapid retrieval of pertinent information from a current drug guide, and accurate retrieval of information from a comprehensive drug information source.
2. Monitor and evaluate the effectiveness of drug therapy, focusing on selection and interpretation of basic focused nursing assessments to detect therapeutic effects, side effects and adverse reactions, and drug-drug, drug-food, and drug-natural product interactions for specific classes of drugs, surveillance for vulnerability to negative effects of specific classes of drugs based on age, developmental physiology, and concurrent pathophysiology, psychopathology or other factors.
3. Teach patients, family members, and others from diverse populations regarding safe and effective use of drugs and natural products, focusing on self-management of specific classes of over-the-counter and prescription drugs that are used episodically, self-management of specific classes of drugs that are taken for chronic conditions, how the action of specific classes of drugs relates to developmental, maturational, aging, neurochemical, and pathophysiological processes, or normal physiology, which side/adverse effects of specific classes of drugs and natural products to self-manage and which ones to report to health professionals, and how to avoid or recognize drug-drug, drug-food, and drug-natural product interactions with specific classes of drugs.
4. Identify appropriate nursing interventions to increase therapeutic benefits and reduce potential negative effects of drug therapy, focusing on identification of basic non-pharmacological nursing interventions that potentially enhance the effectiveness of specific classes of drugs and assessment of barriers to adherence to drug therapy with specific classes of drugs.
5. Communicate appropriately with other health professionals regarding drug therapy, focusing on using appropriate technical language related to pharmacology, explaining drug mechanisms of action and their relationship to normal physiology, and reporting pertinent information about an individual's response to specific classes of drugs or natural products.

NRS 231 - Clinical Pharmacology 2

3 Credit(s)

Prerequisite: NRS 230 and admission in the Nursing Program. This sequel to Clinical Pharmacology I continues to provide the theoretical background that enables students to provide safe and effective care related to drugs and natural products to persons throughout the lifespan. Students will learn to make selected clinical decisions regarding using current, reliable sources of information, monitoring and evaluating the effectiveness of drug therapy, teaching persons from diverse populations regarding safe and effective use of drugs and natural products, intervening to increase therapeutic benefits and reduce potential negative effects, and communicating appropriately with other health professionals

regarding drug therapy. The course addresses additional classes of drugs and related natural products not contained in Clinical Pharmacology 1.

Prerequisite: NRS 230 and admission in the Nursing Program.

Learning Outcomes

Upon successful completion of the course, the student should be able to:

1. Use current, reliable sources of information to access pertinent information about drugs and natural products, focusing on:
 - a. finding and interpreting pertinent current information from a drug guide, comprehensive drug information sources, and electronic databases, and
 - b. accessing and interpreting pharmacology-focused articles in current professional journals
2. Monitor and evaluate the effectiveness of drug therapy, focusing on:
 - a. selection, interpretation, and prioritization of focused nursing assessments to detect therapeutic effects, side effects and adverse reactions, and drug-drug, drug-food, and drug-natural product interactions, and
 - b. surveillance for vulnerability to negative effects of specific classes of drugs based on age, developmental physiology, concurrent pathophysiology, psychopathology or other factors
3. Teach persons, patients and/or family members, from diverse populations regarding safe and effective use of drugs and natural products, focusing on:
 - a. self-management of specific classes of over-the-counter and prescription drugs that are used episodically,
 - b. self-management of multiple drugs that are taken concurrently for acute/chronic conditions,
 - c. how the action of specific classes of drugs relates to pathophysiological processes, neurochemical processes or normal physiology,
 - d. which side/adverse effects of specific classes of drugs and natural products to self-manage and which ones to report to health professionals, and
 - e. how to avoid or recognize drug-drug, drug-food, and drug-natural product interactions with specific classes of drugs.
4. Identify appropriate nursing interventions to increase therapeutic benefits and reduce potential negative effects of drug therapy, focusing on:
 - a. identification of basic nonpharmacological nursing interventions that potentially enhance the effectiveness of specific classes of drugs,
 - b. assessment of barriers to adherence to drug therapy with specific classes of drugs, and
 - c. recognition and basic strategies for reduction of polypharmacy in older adults
5. Communicate appropriately with other health professionals regarding drug therapy, focusing on:
 - a. using appropriate technical language related to pharmacology,
 - b. explaining drug mechanisms of action and their relationship to normal physiology, and
 - c. prioritizing and reporting pertinent information about an individual's response to specific classes of drugs or natural products.

NRS 232 - Pathophysiological Processes 1

3 Credit(s)

Admission in Nursing Program required. This course introduces pathophysiological processes that contribute to many different disease states across the lifespan and human responses to those processes. Students will learn to make selective clinical decisions regarding using current, reliable sources of pathophysiology information, selecting and interpreting focused assessments based on knowledge of pathophysiological processes, teaching persons from diverse populations regarding pathophysiological processes, and communicating with other health professionals regarding pathophysiological processes.

Prerequisite: BI 112 and BI 233 or BI 112 and BI 102G or BI 101F and BI 233 or BI 211 and BI 233 or BI 101K and BI 233 or BI 101K and BI 102G; and BI 234.

Learning Outcomes

Upon successful completion of the course, the student should be able to:

1. Access current, reliable information about selected pathophysiological processes, including cellular adaptation, injury, and death; inflammation and tissue healing; fluid and electrolyte imbalances; and physiologic response to stressors
2. Select and interpret basic focused nursing assessments based on knowledge of clinical manifestations of and developmental considerations in selected pathophysiological processes in patients across the life span
3. Teach persons from diverse populations regarding selected pathophysiological processes, focusing on explaining how the risk factors relate to specific pathophysiological processes, describing selected pathophysiological processes in appropriate terms, explaining how the signs and symptoms relate to specific pathophysiological processes, explaining which signs and symptoms to report to a

health professional, explaining how developmental factors relate to pathophysiology

4. Communicate effectively with other health professionals regarding selected pathophysiological processes, focusing on using appropriate technical language, clarifying technical details of pathophysiological processes, reporting pertinent information about a patient's status

NRS 233 - Pathophysiological Process 2

3 Credit(s)

This sequel to Pathophysiological Processes I continues to explore pathophysiological processes that contribute to disease states across the lifespan and human responses to those processes. Students will learn to make selective clinical decisions regarding using current, reliable sources of pathophysiology information, selecting and interpreting focused assessments based on knowledge of pathophysiological processes, teaching persons from diverse populations regarding pathophysiological processes, and communicating with other health professionals regarding pathophysiological processes. The course addresses additional pathophysiological processes not contained in Pathophysiological Processes I.

Prerequisite: NRS 232 and admission in the Nursing Program.

Learning Outcomes

Upon successful completion of the course, the student should be able to:

1. Access and interpret current, reliable information about selected pathophysiological processes.
2. Select and interpret focused nursing assessments based on knowledge of clinical manifestations, developmental considerations, and potential complications of selected pathophysiological processes in patients across the lifespan.
3. Teach persons from diverse populations regarding selected pathophysiological processes, focusing on:
 - a. explaining how the risk factors relate to specific pathophysiological processes.
 - b. describing selected pathophysiological processes in appropriate terms.
 - c. explaining how the signs and symptoms relate to specific pathophysiological processes.
 - d. explaining which signs and symptoms to report to a health professional.
 - e. explaining how developmental factors relate to pathophysiology, symptom experience, symptom reporting, and symptom management.
4. Communicate effectively with other health professionals regarding selected pathophysiological processes, focusing on:
 - a. using appropriate technical language.
 - b. clarifying technical details of pathophysiological processes.
 - c. prioritizing and reporting pertinent information regarding a patient's status

PN 101A - Practical Nursing 1

7 Credit(s)

This course is the first of three terms in the Practical Nursing Program. Content covered in the classroom and lab will include: nursing and the health care delivery system, complementary and alternative care; legal and ethical issues, including scope of practice; communication; nursing process, critical thinking, physical assessment; documentation, abbreviations, HIPAA; development across the life span; health promotion; cultural diversity; nutrition and therapeutic diets; medical asepsis and infection control; pharmacology and medication administration; and pain assessment. Skills taught during this course will include communication techniques, physical assessment, ambulatory care skills; focused assessments (Braden, falls risk, mini cognition and pain), nursing process, documentation, and oral, topical, drops, ointments, sublingual medication administration, dosage calculation. Clinical application of content and skills will take place in the nursing lab and in outpatient and ambulatory care settings.

Prerequisite: (WR 121 or WR 121_H) and HP 100 and BI 233 and PSY 215 and (MTH 052 or MTH 065 or MTH 095 or higher) or placement test with a grade of C or better.

Corequisite: PN 101B

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Demonstrate beginning understanding of how to develop a nursing care plan and identify the difference between the LPN and RN roles in developing and implementing the plan.

2. Identify members of the health care team and the ethical and legal responsibilities of the LPN as a member of the team.
3. Perform within the legal and ethical guidelines of the profession.
4. Identify the stages of the grieving process and plan/implement appropriate interventions for persons experiencing grief.
5. Identify the physiological and psychological effects of aging and how these effects would affect care of an elderly person.
6. Describe and demonstrate assessment techniques and other methods of gathering data for patient care.
7. Demonstrate an understanding of and the ability to apply principles of medical and surgical asepsis.
8. Demonstrate the ability to calculate medication dosages correctly and administer oral medications safely.
9. Demonstrate proficiency when performing the following skills: handwashing, taking vital signs, measuring/recording intake and output, using appropriate lift/transfer techniques, performing hygiene care, assessing and implementing measures to prevent/treat pressure ulcers, administering oxygen, performing catheter care, and utilizing appropriate measures to ensure patient safety and prevent falls.

PN 101B - Practical Nursing 1 Lab

5 Credit(s)

Clinical lab required for PN101A

Corequisite: PN 101A

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Demonstrate beginning understanding of how to develop a nursing care plan and identify the difference between the LPN and RN roles in developing and implementing the plan
2. Identify members of the health care team and the ethical and legal responsibilities of the LPN as a member of the team
3. Perform within the legal and ethical guidelines of the profession
4. Identify the stages of the grieving process and plan/implement appropriate interventions for persons experiencing grief
5. Identify the physiological and psychological effects of aging and how these effects would affect care of an elderly person
6. Describe and demonstrate assessment techniques and other methods of gathering data for patient care
7. Demonstrate an understanding of and the ability to apply principles of medical and surgical asepsis
8. Demonstrate the ability to calculate medication dosages correctly and administer oral medications safely
9. Demonstrate proficiency when performing the following skills: handwashing, taking vital signs, measuring/recording intake and output, using appropriate lift/transfer techniques, performing hygiene care, assessing and implementing measures to prevent/treat pressure ulcers, administering oxygen, performing catheter care, and utilizing appropriate measures to ensure patient safety and prevent falls

PN 102A - Practical Nursing 2

7 Credit(s)

This course is the second of three terms in the Practical Nursing Program. This course introduces pathophysiological processes that contribute to many different disease states across the lifespan and human responses to those processes. Content continues the application of the nursing process and pharmacological therapies of patients within the practical nursing scope of practice in selected medical-surgical areas. These areas include care of patients with immunological, hematological, neurological, visual/auditory, cardiovascular, endocrine, respiratory, musculoskeletal, gastrointestinal, and renal disorders. Fluid and electrolyte balance and pain management techniques are also included in this course. Cultural, ethical, and health care delivery issues are explored through case scenarios with the application of the nursing process to chronic illness care. Students will learn to make critical thinking-based clinical decisions in the context of nursing by selecting and interpreting focused nursing assessments based on knowledge of pathophysiological processes.

Prerequisite: PN 101A and PN 101B

Corequisite: PN 102B

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Identify potential legal and ethical issues related to client decision-making and informed consent in acute care settings

2. Use therapeutic communication skills in the development of therapeutic relationships with clients and families
3. Describe the pathophysiology, medical management, diagnostic testing, and nursing interventions in caring for clients with diabetes mellitus and cardiovascular, respiratory, gastrointestinal, and urinary/renal disorders
4. Describe the pathophysiology, perioperative management, and nursing interventions for the patient who is having or has had surgery
5. Demonstrate competency in performing skills taught in PN 101 and 102
6. Demonstrate ability to calculate medication doses accurately
7. Demonstrate safe and competent clinical application of acquired knowledge and skills when caring for patients

PN 102B - Practical Nursing 2 Lab

5 Credit(s)

On campus lab and community clinical experiences will be planned by the faculty to meet specific competencies and benchmarks. These experiences will take place in the nursing lab and long-term care (LTC) facilities. Focus is on laboratory and clinical implementation of theory and nursing skills related to assessments, communicating with and caring for individuals with chronic illnesses, diagnostic labs (EKG, obtaining cultures, urinalysis, and visual acuity). Demonstration of interventions; surgical asepsis, wound care, parenteral medication administration (IM, SQ, & ID), enteral (via tubes through the oral, nasogastric, or surgical routes) medication administration, oxygen administration, respiratory care, urinary catheter insertion and care, nasogastric feeding and ostomy care. Continued clinical foci will be total patient care, collecting assessment data, documentation, using the nursing process to implement patient care, and medication administration. The nursing program assumes that acquisition of skill competencies is an ongoing process which requires student motivation and frequent faculty evaluation. Skills taught during this course which will require formal check off in lab prior to patient care will include surgical asepsis, wound care, parenteral medication administration (IM, SQ and ID), and urinary catheterization. These and other previously demonstrated nursing psychomotor skills must be successfully demonstrated and incorporated into the delivery of nursing care by the end of the term.

Corequisite: PN 102A

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Identify potential legal and ethical issues related to client decision-making and informed consent in acute care settings
2. Use therapeutic communication skills in the development of therapeutic relationships with clients and families
3. Describe the pathophysiology, medical management, diagnostic testing, and nursing interventions in caring for clients with diabetes mellitus and cardiovascular, respiratory, gastrointestinal, and urinary/renal disorders
4. Describe the pathophysiology, perioperative management, and nursing interventions for the patient who is having or has had surgery
5. Demonstrate competency in performing skills taught in PN 101 and 102
6. Demonstrate ability to calculate medication doses accurately
7. Demonstrate safe and competent clinical application of acquired knowledge and skills when caring for patients

PN 103A - Practical Nursing 3

7 Credit(s)

This course is the final term in the Practical Nursing Program. This course builds on previously learned content by identifying assessment and common interventions (including relevant technical procedures) for care of patients across the lifespan who require acute care, including high-risk childbirth and mental health disorders. Disease/illness trajectories and their translation into clinical practice guidelines and/or standard procedures are considered in relation to their impact on providing culturally sensitive, client-centered care. Leadership, delegation, supervision, quality improvement, standards for and scope of practice for the LPN are included. A variety of teaching methodology will be used to include but not limited to: lecture and discussion, media presentations, small group work, journal article review, and case study analysis. This course includes classroom, online, on-campus and off-campus clinical learning.

Prerequisite: PN 102A and PN 102B

Corequisite: PN 103B

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Describe the pathophysiology, medical management, and nursing intervention in caring for the client with cancer, immune disorders, and selected conditions of the musculoskeletal, hematologic, neurological, and reproductive systems.
2. Describe appropriate care for the woman and family during an uncomplicated pregnancy.
3. Describe appropriate nursing care of the mother with an uncomplicated labor, delivery, and postpartum period.
4. Describe appropriate nursing care for the full-term, uncompromised neonate.
5. Discuss/identify behaviors appropriate for developmental stages in infancy through toddler and pharmacological considerations in caring for the pediatric client.
6. Describe the principles of pharmacodynamics and pharmacokinetics.
7. Accurately calculate drug dosages and administer medications.
8. Identify the practical nurse's scope of practice in acknowledging all members of the health care team in data collection, contributing to the plan of care, providing and evaluating client care.
9. Describe trends for practical nursing in the future, considering societal changes, roles, and technical advances.
10. Demonstrate increasing aptitude in recognizing, defining and functioning within the accepted roles of nursing, especially provider of care, member within the discipline of nursing.
11. Describe the role of the practical nurse in the care of the client with mental health/psychiatric disorders.
12. Demonstrate competency and safety in the provision of nursing care.

PN 103B - Practical Nursing 3 Lab

6 Credit(s)

On-campus and off-campus clinical experiences will be planned by the faculty to meet specific competencies and benchmarks. These experiences will take place in the nursing lab, simulation lab, ambulatory care, acute care, and long-term care (LTC) facilities. Focus is on laboratory and clinical implementation of theory and nursing skills (venipuncture, intravenous therapy and IV medication administration). A final clinical practicum experience designed to facilitate the transitional process from student practical nurse to beginning licensed practical nurse is included at the end of the term. This individualized clinical experience will focus on clinical decision-making, nursing actions based on learned theory, concepts of nursing process, health of individuals, and health of communities. Students will be guided by a preceptor in their final practicum.

Corequisite: PN 103A

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Describe the pathophysiology, medical management, and nursing intervention in caring for the client with cancer, immune disorders, and selected conditions of the musculoskeletal, hematologic, neurological, and reproductive systems
2. Describe appropriate care for the woman and family during an uncomplicated pregnancy
3. Describe appropriate nursing care of the mother with an uncomplicated labor, delivery, and postpartum period
4. Describe appropriate nursing care for the full-term, uncompromised neonate
5. Discuss/identify behaviors appropriate for developmental stages in infancy through toddler and pharmacological considerations in caring for the pediatric client
6. Describe the principles of pharmacodynamics and pharmacokinetics
7. Accurately calculate drug dosages and administer medications
8. Identify the practical nurse's scope of practice in acknowledging all members of the health care team in data collection, contributing to the plan of care, providing and evaluating client care
9. Describe trends for practical nursing in the future, considering societal changes, roles, and technical advances
10. Demonstrate increasing aptitude in recognizing, defining and functioning within the accepted roles of nursing, especially provider of care, member within the discipline of nursing
11. Describe the role of the practical nurse in the care of the client with mental health/psychiatric disorders
12. Demonstrate competency and safety in the provision of nursing care

Nutrition

FN 105 - Nutrition for Foodservice Professionals

3 Credit(s)

Introductory class to develop skills for improving healthy eating choices. Students will evaluate media messages, food products and their own diet. They will learn healthy cooking techniques & share budget friendly recipes.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Identify and discuss dietary guidelines and recommended dietary allowances based on current USDA Food Guideline principles and food groups
2. Describe primary characteristics, functions and major food sources of major nutrients
3. List the primary characteristics, functions and sources of vitamins, water and minerals
4. Interpret food labels in terms of the portion size, ingredients and nutritional value
5. Identify common food allergies and determine appropriate substitutions. (i.e. gluten, sugar, lactose free)
6. Evaluate and analyze recipes and menus using dietary guideline recommendations, food guides and food labels
7. Discuss contemporary nutritional issues to include specialty diets, dietary trends, and religious dietary laws (i.e. vegetarianism, veganism, heart-healthy menus, food allergies, alternative dieting, etc.)
8. Discuss and demonstrate cooking techniques that apply sound nutritional principles and current industry trends

FN 110 - Personal Nutrition

3 Credit(s)

This course focuses on how to prepare and offer a variety of nutrient dense foods to families in an environment that helps family members develop a positive approach to eating. Nutritional guidelines are discussed for infants and the younger and older child. Ideas for menu planning and recipes are given.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Name the three macronutrients and selected micronutrients of concern, where you find them in foods, their dietary recommendations, and explain how they contribute to a healthy diet and body
2. Describe how dietary intake may need to be modified based on special situations like vegetarianism, lactose intolerance, or a gluten-free diet
3. Evaluate sources of nutrition information and distinguish between credible sources and junk science
4. Use tools, including MyPlate, Harvard Healthy Eating Plate, and the Dietary Guidelines for Americans for evaluating personal dietary intake and planning a healthful diet
5. Critically evaluate and compare nutrition labels and determine the nutrient density of each food
6. Explain the challenges and best practices related to body weight management and its relationship to physical and mental health
7. Create an action plan for cooking budget-friendly recipes using local and seasonal foods

FN 130 - Family Food and Nutrition

3 Credit(s)

This course focuses on how to prepare and offer a variety of nutrient dense foods to families in an environment that helps family members develop a positive approach to eating. Nutritional guidelines are discussed for infants and the younger and older child. Ideas for menu planning and recipes are given.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Develop eating patterns that promote health.
2. Make eating choices based on some knowledge of a sustainable U.S. food production system.
3. Avoid restrictive dietary formulas that perpetuate fearful and anxious attitudes about food and eating.
4. Describe the responsibilities of parents and children when it comes to feeding.
5. Identify the role of each food group in a nutritionally adequate diet.
6. Select, prepare and enjoy wholesome food that tastes good and is easily prepared using inexpensive, locally available foods.
7. Have a collection of recipes for the above types of foods.

8. Describe appropriate techniques for feeding infants and children.
9. Suggest appropriate solutions to feeding problems with infants and children.
10. Understand both sides of some nutrition issues such as breast vs. formula feeding and vegetarianism for children.
11. Have menu ideas for adults and children of all ages.
12. Evaluate children's books for their messages about food and health.

FN 190 - Sports Nutrition

2 Credit(s)

This course presents the role of a variety of nutrients in maintaining a body that is healthy and that supports athletic performance. Skills are developed to create an eating and hydration plan to support athletic performance and to stay well-nourished.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Develop an eating and hydration plan that enhances health and athletic performance.
2. Identify the role of a variety of nutrients in maintaining a body that is healthy and that supports athletic performance.
3. Navigate healthfully through grocery stores, restaurants, food courts and home kitchens.
4. Have a collection of healthy recipes and menus for healthy eating during an active lifestyle.
5. Evaluate current food, diet and supplement options and understand which are best based on individual goals.
6. Maintain healthy attitudes about food and weight.
7. Understand the role of exercise and nutrition in the management of some chronic diseases

FN 225 - Nutrition

4 Credit(s)

This course focuses on how nutrients, food, and dietary patterns affect human health. Students will build a working knowledge of food sources, functions, requirements, digestion, absorption, and metabolism of nutrients (carbohydrates, proteins, fats, vitamins, minerals, and water). Students will develop skills for improving dietary habits and evaluating the evidence base and validity of nutrition information. This course is designed for health profession majors.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Define and classify the six classes of nutrients, identify where they are found in foods, and explain how they are digested, absorbed, metabolized, and utilized
2. Distinguish between adequate nutrient intake, deficiencies, and toxicities and how these levels impact body systems and health outcomes
3. Explain the importance of a moderate approach when it comes to nutrition and energy balance, recognizing that all foods can fit into a healthful diet
4. Describe how nutrition is one of many dimensions of health; many other factors, including social determinants of health and physical activity, contribute to health and well-being
5. Apply scientific reasoning and critical thinking to evaluate the evidence base and validity of nutrition information
6. Evaluate food labels and dietary patterns using evidence-based guidelines, and identify strategies for improving dietary habits and establishing a healthy relationship with food

Philosophy

PHL 201 - Ethics

4 Credit(s)

Ethics is the study of morality, including an analysis of the concepts of good and evil, right and wrong, justice, responsibility, duty, character and successful living. Topics include whether morality is relative to culture or to the individual, moral skepticism, the relationship between morality and religion, theories about what makes particular actions right or wrong, the source of moral knowledge and how morality affects the way we approach controversial social issues.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior. Analyze concepts of good and evil, right and wrong, justice and injustice, duty, responsibility, character, and successful living.
2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live. Bring their conclusions about

ethics to bear on their present values, goals and way of life. Learn about multiple ethical perspectives but come to their own conclusions about moral questions.

3. Understand the role of individuals and institutions within the context of society. Students grapple with whether morality is relative to culture or to the individual and contrasting views on the importance of the individual vs. society, such as egoism, deontology and utilitarianism.
4. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry. Students study theories about what makes particular actions right or wrong, moral skepticism, the relationship between morality and religion and eastern perspectives on right action.
5. Utilize appropriate information literacy skills in written and oral communication. Students write forum posts and critical papers analyzing primary source materials and/or advancing an ethical thesis. Students participate in rigorous guided class discussions about ethics.
6. Understand the diversity of human experience and thought, individually and collectively. Students survey a wide array of ethical theories.
7. Apply knowledge and skills to contemporary problems and issues. Students apply abstract ethical principles to social and political issues and moral dilemmas encountered in daily life.

PHL 202 - Theories of Knowledge

4 Credit(s)

Theories of knowledge (epistemology) address issues such as the nature of truth and rational justification, whether knowledge comes primarily through reason or the senses and how our common sense beliefs about the world might be proven. Additional topics may include how much control we have over our beliefs, whether duties or rights apply to beliefs and the relationship between faith and reason.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior. Analyze the nature of knowledge, how it differs from mere opinion, and whether knowledge comes primarily through the senses, reason, intuition or revelation.
2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live. Examine their own beliefs in the light of various theories of justification. Apply epistemological concepts to religion, morality and politics.
3. Understand the role of individuals and institutions within the context of society. Students grapple with the role of subjectivity in knowing and consider whether truth and knowledge are relative to the individual or society or whether it is objective in nature.
4. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry. Students study and evaluate different theories of knowledge, including rationalism, empiricism, Kantian epistemology, pragmatism and existentialism.
5. Utilize appropriate information literacy skills in written and oral communication. Students write forum posts and critical papers analyzing primary source materials and/or advancing an epistemological thesis. Students participate in rigorous guided class discussions about fundamental issues regarding knowledge.
6. Understand the diversity of human experience and thought, individually and collectively. Students survey a diversity of theories about knowledge and compare and contrast them throughout the term.
7. Apply knowledge and skills to contemporary problems and issues. Students apply epistemological concepts to questions about bias in American higher education and mass media.

PHL 203 - Theories of Reality

4 Credit(s)

Theories of reality (metaphysics) is an attempt to discover and describe the underlying nature of existence. Possible topics include the nature of the self, the relationship between matter and consciousness, free will, the existence of God, death, and the meaning of life. These topics may be approached from the perspective of both Eastern and Western philosophy.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior. Analyze the nature of the self and the world, the relationship between matter and consciousness and free will.

2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live. Examine their own beliefs in the light of various metaphysical theories. Apply metaphysical concepts to questions regarding the existence of God, death, and the meaning of life.

3. Understand the role of individuals and institutions within the context of society. Students study contrasting views of the individual in Eastern and Western philosophy.

4. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry. Students learn the origins of the philosophy, which gave rise to natural philosophy or science. Students study and evaluate different theories of reality, including idealism, materialism and dualism.

5. Utilize appropriate information literacy skills in written and oral communication. Students write forum posts and critical papers analyzing primary source materials and/or advancing a metaphysical thesis. Students participate in rigorous guided class discussions about fundamental issues regarding the nature of reality.

6. Understand the diversity of human experience and thought, individually and collectively. Students survey a diversity of theories about the nature of the self and the world and compare and contrast them throughout the term.

7. Apply knowledge and skills to contemporary problems and issues. Students apply metaphysical concepts to contemporary questions such as whether criminals ought to be blamed and punished or rehabilitated or whether God and an afterlife are required to give life meaning.

PHL 221 - Critical Thinking

4 Credit(s)

This course is aimed at developing practical reasoning skills. Students will learn to analyze and evaluate arguments, detect fallacies, distinguish science from pseudo-science, recognize media bias, and better understand methods of deception employed by advertisers, political organizations and others. A central goal of this course is to develop an attitude of fair-mindedness and intellectual honesty while learning to avoid the pitfalls of defensiveness and rationalization.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior.
2. Developing practical reasoning skills. Students will learn to analyze and evaluate arguments, detect fallacies, distinguish science from pseudo-science, recognize media bias, and better understand methods of deception employed by advertisers, political organizations and others.
3. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live. A central goal of this course is to develop an attitude of fair mindedness and intellectual honesty while learning to avoid the pitfalls of defensiveness and rationalization.
4. Understand the role of individuals and institutions within the context of society. Students learn the importance of independent thinking while recognizing the value of educational and scientific institutions which can help them critically evaluate claims.
5. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry. Students study methods of evaluating different theories and assessing their strengths and weaknesses.
6. Utilize appropriate information literacy skills in written and oral communication. Students critically analyze arguments in class discussion and in critical essays and papers.
7. Understand the diversity of human experience and thought, individually and collectively. Students survey a variety of irrational viewpoints and poor arguments, as well as rational and strong arguments from classic literature to mass media, advertising and politics.
8. Apply knowledge and skills to contemporary problems and issues. Students must develop their own point of view and make arguments for it on a variety of current issues in applied ethics.

Physical Education

PE 101 - Cardio Core Conditioning

1 Credit(s)

Designed to improve daily functioning, this class integrates rhythmic cardiovascular and resistance exercises with core conditioning techniques. Steps, hand weights and elastic bands are utilized to maximize exercise benefits. This class format is suitable for students of various fitness levels. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Achieve a higher level of fitness
2. Identify benefits of aerobic, strength, core, agility, and flexibility training
3. Assess one's fitness level
4. Apply effective goal-setting methods
5. List factors influencing fitness
6. List major components of fitness
7. Identify basic fitness principles
8. Understand general exercise recommendations
9. Assess one's intensity level during exercise
10. Engage in a safe and effective exercise regime
11. Develop a personalized exercise plan
12. Identify core muscles and their functions
13. Understand how to engage core muscles in exercises as well as daily tasks
14. Understand the relation of nutrition and hydration to functioning

PE 102 - Combination Aerobics

1 Credit(s)

This rhythmic aerobics class is designed to increase cardiovascular fitness and muscular endurance through a variety of exercise formats. Students participate in a variety of formats such as step aerobics, dance aerobics, circuit training, interval training and kickboxing aerobics. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Maintain or increase one's level of fitness.
2. Identify benefits of aerobic, strength, core, agility, and flexibility training.
3. Assess one's level of fitness.
4. Apply effective goal-setting methods.
5. List factors influencing fitness.
6. List major components of fitness.
7. Identify basic fitness principles.
8. Understand general exercise recommendations.
9. Assess one's level of intensity during exercise.
10. Engage in a safe and effective exercise regime.
11. Understand and experience the benefits of cross-training.
12. Understand and experience the benefits of periodization.
13. Identify the benefits of interval training.
14. Execute basic step, kickboxing and dance aerobics combinations.
15. Identify core muscles and their functions.
16. Develop a personalized exercise plan.
17. Understand the relation of nutrition to functioning.

PE 103 - Cardio Kickboxing

1 Credit(s)

Inspired by various forms of martial arts, Cardio Kickboxing incorporates rhythmic combinations and drills to improve cardiorespiratory endurance. Students learn wellness-related concepts and apply exercise principles to enhance overall health. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Practice a safe and effective exercise regime.
2. Maintain or increase one's fitness level.
3. Identify benefits of aerobic exercise, resistance training and flexibility training.
4. Discover and apply methods for effective goal setting.
5. Develop a personalized exercise plan.
6. Identify and apply basic fitness principles and recommendations.
7. Develop greater body/mind awareness and appreciation, incorporate self-compassion techniques.
8. Understand aerobic kickboxing terminology.
9. Execute aerobic patterns and kickboxing combinations.
10. Identify individual target heart rate.
11. Understand rate of perceived exertion and "talk test."

PE 104 - Body Sculpt

1 Credit(s)

Rhythmic class incorporates resistance and aerobic exercises to increase muscular endurance and cardiorespiratory fitness. Weights, resistance bands and other equipment are utilized to develop muscle firmness and definition. Fitness principles, stress management, and nutrition concepts are examined. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Practice a safe and effective exercise regime.
2. Maintain or increase one's fitness level.
3. Identify benefits of resistance training, aerobic exercise, flexibility and core training.
4. Discover and apply methods for effective goal setting.
5. To learn and utilize various resistance training methods.
6. Understand physiological responses to exercise demands.
7. Develop a personalized exercise plan.
8. Identify and apply basic fitness principles.
9. Develop greater body/mind awareness and appreciation, incorporate self-compassion techniques.

PE 105 - Step and Sculpt

1 Credit(s)

Step & Sculpt is designed to increase muscular endurance and strength as well as enhance cardiovascular endurance. Participants learn and execute both step aerobics combinations and resistance exercises to experience the benefits of both approaches. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Practice a safe and effective exercise regime
2. Maintain or increase one's level of physical fitness
3. Identify benefits of aerobic exercise, resistance training, flexibility training, and core training
4. Learn and apply methods for effective goals setting
5. Develop a personalized exercise plan
6. Identify and apply basic fitness principles
7. Understand step terminology
8. Learn and execute step aerobics combinations
9. Learn names for major muscles and muscle groups
10. Identify target heart rate
11. Understand rate of perceived exertion and "talk test"

PE 106 - Yogilates

1 Credit(s)

Yogilates incorporates the principles and methods of Pilates and Yoga to promote flexibility, balance, and core strength. Participants progress individually as exercises are taught at various levels to improve coordination, confidence, body awareness and body appreciation. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Execute safe and effective exercises.
2. Maintain or increase fitness level.
3. List benefits of aerobic exercise, resistance training, flexibility and core training.
4. Learn and apply methods for effective goal setting.
5. Identify at least one fitness principle.

PE 107 - Zumba Fitness

1 Credit(s)

Ditch the Workout, Join the Party." Zumba will have you grooving to the beats of Salsa, Merengue, Reggaton and Cumbia to name a few. This Latin inspired dance workout is fun and full of energy. You don't need to be a great dancer, to feel welcome in Zumba class, have a good time no rhythm required. Repeatable up to 12 credits.

Learning Outcomes

Upon completion of this course the graduate will:

1. Increase aerobic fitness levels.
2. Increase cardiovascular fitness, improve muscle tone and flexibility.
3. Understand how to execute the four basic Zumba dance steps: Salsa, Reggaton, Cumbia and Merengue.
4. Develop the knowledge of the basic Zumba steps plus other Latin dance steps.
5. Gain knowledge of basic human anatomy, dance training terminology, and other various exercise science topics.
6. Gain knowledge of and participate in a variety of choreographed dances.
7. Assess one's intensity level during exercise.
8. Engage in a safe and effective exercise regime.

9. Develop greater body awareness and appreciation, incorporate self-compassion techniques and patience.

PE 108 - Conditioning

1 Credit(s)

Various instructor-led activities utilize fitness equipment to enhance overall fitness. This progressive, cross-training approach is designed to improve strength, endurance, flexibility, and core stability. Nutrition and stress management concepts will be introduced. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Gain knowledge and understanding of the benefits of exercise.
2. Assess one's own level of physical fitness.
3. Understand the make-up of a quality fitness workout and the five components of health-related fitness.
4. Develop and maintain a higher level of physical fitness.
5. Understand basic nutrition principles as they relate to lifelong weight maintenance and fueling for performance.
6. Develop knowledge and skills of safe cardiovascular, strength and flexibility exercises that help enhance health.
7. Develop and/or enhance a positive interest in exercise and conditioning for continued interest, enjoyment, improvement and participation.

PE 110 - Walk Jog

1 Credit(s)

Emphasis is on a progressive walking program to develop, maintain and assess cardiovascular fitness, and muscle endurance. Instruction will include: joint flexibility, proper technique, training principles, injury prevention and nutrition. Health, Wellness, and Fitness concepts will be addressed. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Develop and improve cardiovascular fitness and muscular endurance.
2. Develop knowledge of flexibility and core exercises that compliment walking.
3. Develop efficient walking techniques.
4. Develop a positive interest in walking for continued interest, enjoyment, improvement and participation.
5. Develop the knowledge, ability to train, and compete in a walking competition (Road Run).
6. Understand basic nutrition principles as they relate to lifelong weight maintenance and fueling for performance.
7. Understand the make-up of a quality fitness workout and the five components of health-related fitness.
8. Gain knowledge of and practice in different types of training programs and routines.

PE 111 - Group Cycling

1 Credit(s)

Instructor lead class using stationary cycles designed to improve cardiovascular endurance, enhance cycling skills and body mechanics. The class uses a variety of cycling specific body positions while providing lower level options for participants. Supplemental strength will also be introduced. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Understand and incorporate a variety of cycle riding positions.
2. Understand and participate in a variety of cycling workout programs.
3. Understand the muscular activation patterns used during cycling.
4. Correctly adjust and operate the cycling bikes.
5. Improve their cardio-respiratory fitness and muscular endurance.
6. Develop core endurance.
7. Understand the make-up of a quality fitness workout and the five components of health-related fitness.
8. Understand basic nutrition principles as they relate to lifelong weight maintenance and fueling for performance.

PE 112 - Fitness Circuits

1 Credit(s)

This is an advanced fitness class that utilizes fitness circuits to improve overall endurance, strength, and flexibility. Circuit difficulty will progress throughout the quarter. Various exercise equipment will be used. Concepts on nutrition, stress management and weight control are introduced. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Increase aerobic and anaerobic fitness levels
2. Increase cardiovascular fitness, improve muscle tone and flexibility
3. Understand and practice safe exercise technique while participating in a variety of circuit training programs
4. Develop the knowledge of basic exercises for all major muscle groups
5. Gain knowledge of basic human anatomy, training terminology, and other various exercise science topics
6. Understand basic nutrition principles as they relate to lifelong weight maintenance and fueling for performance
7. Establish techniques to successfully identify and reduce the effects of certain stressors
8. Gain knowledge of and participate in a variety of fitness circuit routines

PE 113 - Fitness Education: Introduction

1 Credit(s)

Students are guided in creating a balanced, personal fitness program in a supportive and noncompetitive environment. This class is self-paced and does not meet at a particular time. Refer to the class Moodle page for more specific details. Workout on your own time in the fitness center to fulfill course requirements and meet personal goals. All levels are welcome. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Identify the components of health-related physical fitness and their benefits to one's overall health.
2. Actively participate in a wide variety of fitness activities displaying proper form, technique, and utilizing a variety of equipment.
3. Understand basic nutrition principles as they relate to lifelong weight maintenance.
4. Understand the role of physical activity, proper nutrition, and sufficient rest and relaxation as they relate to lifelong health and wellness.
5. Set appropriate fitness and health behavior goals to either improve or maintain one's current health and fitness level.

PE 114 - Fitness Education: Continuing/Returning

1 Credit(s)

For students who have completed PE 113 and wish to continue their fitness program. Course opportunities include: Personal training, fitness and health seminars, and fitness assessments. This class is self-paced and does not meet at a particular time. Refer to the class Moodle page for more specific details. Repeatable up to 12 credits.

Prerequisite: PE 113

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Understand how to modify and adapt (progression or regression) one's current exercise program in order to accommodate changing fitness levels, injuries, illness, or other life changes.
2. Understand the benefits of cross-training activities.
3. Understand the role of physical activity in the prevention of chronic disease.
4. Understand the role of physical activity, proper nutrition, and sufficient rest and relaxation as they relate to lifelong health and wellness.
5. Model appropriate exercise and lifestyle behaviors that contribute to lifelong wellness.
6. Understand how to assess one's current fitness level using a variety of techniques.
7. Show progression of learning and fitness outcomes from PE 183F.

PE 115 - Jogging

1 Credit(s)

Emphasis is on a progressive jogging program to develop, maintain and assess cardiovascular fitness, and muscle endurance. Instruction will include: joint flexibility, proper technique, training principles, injury prevention and nutrition. Health, Wellness and Fitness concepts will be addressed. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Develop and improve cardiovascular fitness and muscle endurance.
2. Develop knowledge of flexibility and core exercises that compliment jogging.
3. Develop efficient jogging/ running techniques.
4. Develop a positive interest in jogging for continued interest, enjoyment, improvement and participation.
5. Develop the knowledge, ability to train, and compete in a jogging/running competition (Road Run).
6. Understand basic nutrition principles as they relate to lifelong weight maintenance and fueling for performance.
7. Understand the make-up of a quality fitness workout and the five components of health-related fitness.
8. Gain knowledge of and practice in different types of training programs and routines.

PE 116 - Stability Ball Fitness

1 Credit(s)

Students perform exercises with a stability ball focusing on increasing core stability muscular strength, endurance, flexibility, balance, and coordination. Light weights, resistance bands and weighted balls will be used during workouts. Nutrition and stress management concepts will be introduced. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Enhance warm-up and flexibility skills through stretching for all major muscle groups.
2. Enhance strength training abilities including strengthening and endurance of all major muscle groups using the stability ball.
3. Enhance cardiovascular endurance by increasing heart rate using the stability ball.
4. Improve overall core strength and function by integrating and improving agility, balance and coordination in all three planes of motion.
5. Provide knowledge of stability ball exercises and skills, training terminology, and basic human anatomy and physiology.
6. To develop knowledge of progressive exercises for all muscle groups using the stability ball.
7. Compare and evaluate nutritional intake to recommended governmental guidelines.
8. Increase your interest in developing and maintaining your overall health and wellness.

PE 117 - Strength Training

1 Credit(s)

Emphasis on progressive resistance training using a variety of exercise modalities including barbells, dumbbells, resistance bands, body weight, and machines. Develop strength, muscular size, toning, and improve general physical condition. Proper technique and lifting programs will be discussed. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Gain overall body strength and appearance.
2. Develop knowledge of weight training skills, terminology, rules, safety, and basic human anatomy.
3. Progressively develop their strength training skills.
4. Develop knowledge of basic exercises for all major muscles groups.
5. Gain knowledge of exercise programs and routine.
6. Understand basic nutrition principles as they relate to lifelong weight maintenance and fueling for performance.
7. Improve fitness level.

PE 118 - Power Conditioning

1 Credit(s)

Prerequisites: Any of the sports classes This progressive, cross-training approach is designed to improve strength, flexibility and core stability. Resistance training using dumbbells, bands, body weight and machines will be introduced. Develop and assess strength, muscle and improved mental well-being. Repeatable up to 12 credits.

Prerequisite: Any of the sports classes

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Gain overall muscle strength and endurance

2. To increase aerobic and anaerobic fitness levels
3. To develop the knowledge of basic level and advanced level exercises
4. To experience common exercise programs and routines

PE 119 - Strength Training for Women

1 Credit(s)

Emphasis on resistance training using a variety of exercise modalities. Develop and assess strength, muscular size, muscle definition, toning and improve general physical condition. Safe and proper technique, routines, programs, nutrition and stress management concepts will be addressed. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Gain knowledge of weight training benefits, skills, terminology, safety and anatomy.
 2. Assess one's own level of strength in specific major muscles.
 3. Develop and utilize knowledge of safe and effective basic and progressive level exercises for major muscles.
 4. Gain and improve muscle strength and tone through safe and effective workouts.
 5. Gain knowledge of exercise programs and routines.
 6. Learn how nutrition and supplements affect strength gains and physical fitness.
 7. Increase confidence and interest in exercise and strength training for continued participation and improvement.
-

PE 120 - Archery

1 Credit(s)

Beginning and experienced students will learn safety, use of equipment, basic rules, etiquette, terminology and skill techniques to shoot at different size targets at various distances. All equipment provided. If you have your own equipment, ask instructor if it is suitable for our range. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Develop and work to improve skill for safe and satisfying participation.
 2. Gain knowledge in archery safety, rules, scoring, equipment and terminology.
 3. Gain knowledge and skill in the proper use and care of equipment.
 4. Acquire knowledge and techniques for continued skill improvement.
 5. Gain sufficient confidence, skill and knowledge to continue participation in and enjoyment of archery, if student should choose to.
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PE 122 - Badminton

1 Credit(s)

Learn badminton and improve fitness through skill drills and game play. Footwork, grip, forehand and backhand shots, scoring, terminology, etiquette, singles and double play, game strategy and rules will be covered. Designed for all skill levels. Equipment provided, but may bring own racquet. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Develop, review and improve basic and/or intermediate skills and strategies.
 2. Gain and improve knowledge of the game, rules, strategies, equipment, etiquette, etc.
 3. Acquire knowledge for continued self-improvement in skill and strategies.
 4. Obtain physical exercise and develop physical fitness.
 5. Gain sufficient skill and knowledge for continued interest, enjoyment and participation.
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PE 124 - Bowling

1 Credit(s)

Instruction and practice in the fundamentals skills and techniques used for both straight and hook deliveries will be covered. Rules, scoring and etiquette will be addressed. This course is designed for beginning bowlers and is held off campus.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Develop an understanding of house rules and regulations
 2. Learn how to keep score
 3. Gain an understanding of bowling etiquette
 4. Gain an understanding of bowling terminology
 5. Learn the 4 or 5 step approach
-

PE 125 - Fencing Beginning

1 Credit(s)

Instruction in basic foil fencing skills, including offensive and defensive skills, rules, etiquette, judging, and bout experience. Class includes warm-up and stretching skills. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Gain sufficient skill and knowledge to be able to perform at a beginning level.
 2. Learn the rules and etiquette of fencing.
 3. Gain a reasonable level of fitness for fencing.
 4. Gain in self-confidence, discipline, sportsmanship, and enjoyment of fencing.
-

PE 126 - Golf Beginning

1 Credit(s)

Beginning golf is an introduction to golf including short game, full swing and routines on the course. Rules and etiquette will also be introduced. Upon completion, the student will have enough working knowledge to start playing the game. Some rounds of golf are provided. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Develop an understanding of basic rules and proper etiquette.
 2. Learn about appropriate equipment and club selection.
 3. Learn the application of ball flight.
 4. Develop individual set-up/routine for addressing the ball.
 5. Learn the many physical aspects of the game, including but not limited to, putting, chipping, pitching, driving, and fairway, and bunker play.
 6. Understand swing mechanics and work to become consistent with their own swing.
 7. Develop an appreciation for the game as a lifelong fitness and wellness activity.
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PE 127 - Karate

1 Credit(s)

Basic skills of karate including blocks, punches, strikes, and kicks. Discussions include technique and power, history of karate, and the students' legal rights and responsibilities for self-defense in Oregon. This class includes sparring strategies. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Understand individual spatial dimensions
 2. Improve physical abilities
 3. Improve awareness of self and the environment
 4. Develop basic skills of various techniques used in the martial arts defense
 5. Develop an understanding of practicality and self discipline in using various techniques
 6. Increase knowledge of history, terminology, safety, and regulations
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PE 129 - Personal Defense

1 Credit(s)

Instruction in fundamental personal defense skills and prevention methods to improve one's safety. Students develop skills which promote self-assurance to reduce panic. The Legal rights and responsibilities in Oregon will also be presented. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Develop basic skills and techniques to aid the individual in self defense
 2. Improve their physical abilities to defend themselves
 3. Improve awareness of self and the environment
-

PE 130 - Disc Golf

1 Credit(s)

Basic skills of Disc Golf. This class will include discussion of rules, strategy and etiquette for organized play. Techniques learned in putting, throwing and footwork will prepare students for active game play. Students will be prepared for tournament play and enjoyment of this exciting, competitive sport. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Have the ability to throw a variety of shots while understanding throwing jargon and etiquette during a round of disc golf
2. Understand footwork for alternate throws
3. Learn and understand PDGA rules and regulations
4. Be prepared for tournament play and lifelong enjoyment of the sport

PE 133 - Meditation

1 Credit(s)

A survey of diverse meditation techniques to enable students to find the appropriate methods for use themselves. Includes discussion and practice. Learn how movement, breathing, inner focus and nutrition contribute to stress reduction and improved well-being. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Understand manifestations of stress and relaxation responses and learn how to elicit the relaxation response.
 2. Learn techniques of meditation.
 3. Learn techniques which promote meditation.
 4. Learn how to apply meditation and relaxation techniques to everyday life.
 5. Enhance flexibility, postural alignment and stress reduction.
 6. Have enough information about, and experience of, meditation to choose a method or methods appropriate for you.
 7. Be able to integrate information and insights from the class into your life outside of class and outside of formal meditation practice.
-

PE 134 - Tai Chi Chuan

1 Credit(s)

Beginning concepts of Yang style Tai Chi Chuan. Develop flexibility, relaxation and concentration. Improve balance, energy flow, breathing and coordination of body movement. Learn how nutrition contributes to improved well-being and stress reduction. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Develop physical fitness and neuromuscular skill.
 2. Develop an understanding of carry over values and the use of leisure time.
 3. Develop an appreciation for physical activities.
 4. Increase knowledge such as rules, history, terminology, etiquette or health habits.
 5. Learn a series of postures and based on Yang Style Tai Ji.
-

PE 136 - Yoga

1 Credit(s)

Basic knowledge of asanas (postures), pranayama (breathing techniques), relaxation and yogic philosophy will be introduced. Includes both discussion and practice. Learn how movement, breathing and nutrition contribute to stress reduction and improved well-being. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Perform a comprehensive yoga practice on your own.
 2. Integrate understandings, insights, postural alignments and stretches into your life outside of formal yoga practice.
 3. Understand basic yoga philosophy and practice.
 4. Improve postural alignment.
 5. Increase flexibility, respiratory, and strength functions.
 6. Experience stress reduction.
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PE 137 - Gentle Yoga

1 Credit(s)

Learn gentle yoga postures, breathing and relaxation techniques. Designed for students who need modification of classical practice due to limited mobility or other special needs. Includes discussion and practice. Learn how movement, breathing and nutrition contribute to stress reduction. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Improve postural alignment.
 2. Improve flexibility, respiratory and strength functions.
 3. Experience stress reduction.
 4. Understand basic yoga philosophy and practice and how to use them for personal practice.
-

PE 138 - Ballroom Dancing

1 Credit(s)

Introductory course in basic ballroom dance forms Waltz, Foxtrot, Swing, and Rumba. Students will learn basic steps and proper technique, posture, balance and coordination. Students will learn how social dance contributes to an active lifestyle, improves confidence and well-being and reduces stress. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Explain the general, physical, mental and social benefits of dancing.
 2. Demonstrate proper dance etiquette on and off the dance floor.
 3. Demonstrate proper posture and frame while dancing as a lead or follow.
 4. Recognize the music and rhythm of waltz, foxtrot, swing and rumba.
 5. Dance as a lead or follow the basic steps waltz, foxtrot, swing and rumba.
 6. Dance as a lead or follow basic variations and figures and simple combinations in waltz, foxtrot, swing and rumba.
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PE 139 - Latin Dance

1 Credit(s)

Introductory course in basic Latin dance forms including Salsa, Cha-Cha, Rumba, Cumbia, and Merengue. Emphasis on basic steps, proper technique and timing. Learn how basic social dance skills contribute to better overall posture, balance and coordination and how social dance contributes to an active lifestyle, improves confidence and well-being and reduces stress. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Explain the general, physical, mental and social benefits of dancing.
 2. Demonstrate proper dance etiquette on and off the dance floor.
 3. Demonstrate proper posture and frame while dancing as a lead or follow.
 4. Dance as a lead or follow principle basic steps and figures variations of salsa, rumba, merengue, cha cha and cumba.
 5. Incorporate Latin hip motion in basic steps and figures of salsa, rumba, merengue and cha cha.
 6. Dance as a lead or follow choreographed or improvised combinations made up of beginning steps and figures.
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PE 141 - Swing Dancing

1 Credit(s)

Introductory course in single and triple-time East Coast swing. Students will learn basic steps and proper technique, posture, balance and coordination. Students will learn how social dance contributes to an active lifestyle, improves confidence and well-being and reduces stress. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Explain the general, physical, mental and social benefits of dancing.
 2. Demonstrate proper dance etiquette on and off the dance floor.
 3. Demonstrate proper posture and frame while dancing as a lead or follow.
 4. Dance as a lead or follow East Coast swing single- and triple-time basic steps.
 5. Dance as a lead or follow beginning and intermediate level steps, figures and combinations.
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PE 142 - Basketball

1 Credit(s)

Emphasis on the basic fundamentals of the game and individual skills. Daily play and skill work to include footwork, dribbling, passing, shooting, 1 on 1 skills, and team play. Students will experience 3 on 3, 4 on 4 and 5 on 5 game play. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Engage in principles of effective teamwork
 2. Describe and function within fundamentals of basketball including rules and scoring
 3. Demonstrate gains in both individual and team skills
 4. Employ appropriate offensive and defensive strategy during basketball play
 5. Demonstrate gains in personal fitness
 6. Conduct themselves with good sportsmanship and regard to the etiquette of basketball
-

PE 143 - Flag Football

1 Credit(s)

Fundamental skills, rules, and strategy taught through team play. Skill practice and repetition will include passing receiving, and running plays. 1 and 2 point conversions will be covered. Modified NFL Air It Out rules will be used. Defensive strategies and techniques will be covered. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Engage in principles of effective teamwork
2. Describe and function within fundamentals of flag football including rules and scoring

3. Demonstrate gains in both individual and team skills
4. Employ appropriate offensive and defensive strategy during flag football play
5. Demonstrate gains in personal fitness
6. Conduct themselves with good sportsmanship and regard to the etiquette of flag football

PE 144 - Soccer

1 Credit(s)

Instruction and practice in the fundamental soccer techniques, position play, offensive and defensive tactics, team formation and rules of the game. Individual skills and ball handling will be addressed. Team play may include 11 on 11 or mini-game play. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Engage in principles of effective teamwork
2. Describe and function within fundamentals of soccer including rules and scoring
3. Demonstrate gains in both individual and team skills
4. Employ appropriate offensive and defensive strategy during soccer play
5. Demonstrate gains in personal fitness
6. Conduct themselves with good sportsmanship and regard to the etiquette of soccer

PE 145 - Softball Beginning

1 Credit(s)

This co-ed class is for students starting the game as well as those wanting to improve their skills for summer recreational play. Fundamentals such as catching, throwing, fielding, hitting and base running will be practiced. Outfield play, infield play and game strategy will be covered. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Engage in principles of effective teamwork
2. Describe and function within fundamentals of softball including rules and scoring
3. Demonstrate gains in both individual and team skills
4. Employ appropriate offensive and defensive strategy during softball play
5. Demonstrate gains in personal fitness
6. Conduct themselves with good sportsmanship and regard to the etiquette of softball

PE 146 - Ultimate Frisbee

1 Credit(s)

This co-ed game combines the passing and scoring of football, the cutting and guarding of basketball, and the non-stop movement of soccer. Students will learn basic Frisbee handling skills utilized in game play. Discussion of rules, strategy, and terminology will be included. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Engage in principles of effective teamwork
2. Describe and function within fundamentals of ultimate frisbee including rules and scoring
3. Demonstrate gains in both individual and team skills
4. Employ appropriate offensive and defensive strategy during ultimate frisbee play
5. Demonstrate gains in personal fitness
6. Conduct themselves with good sportsmanship and regard to the etiquette of ultimate frisbee

PE 147 - Volleyball

1 Credit(s)

Includes the fundamentals, rules, and strategy of volleyball. Develops specific skills necessary for successful recreational and/or competitive experience in volleyball. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Engage in principles of effective teamwork
2. Describe and function within fundamentals of volleyball including rules and scoring
3. Demonstrate gains in both individual and team skills
4. Employ appropriate offensive and defensive strategy during volleyball play
5. Demonstrate gains in personal fitness
6. Conduct themselves with good sportsmanship and regard to the etiquette of volleyball

PE 225 - Fencing Intermediate

1 Credit(s)

Students will review the skills from Fencing and develop new technical and tactical skills. Expanded instruction in the rules and sportsmanship of fencing, tournament play will be included. Class includes warm-up and stretching skills. Repeatable up to 12 credits.

Prerequisite: PE 125 with a grade of C- or instructor approval.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Improve their command of basic fencing skills, and increase their technical skill base and tactical application of those skills.
2. Learn the basics of tournament rules and playing in a tournament format.
3. Improve their overall fitness level.
4. Gain additional discipline skills, self-confidence and enjoyment of fencing.

PE 234 - Tai Chi Chuan Intermediate

1 Credit(s)

Intermediate concepts of Yang Style Tai Chi Chuan. Use of body strength, flexibility and mental control skills. Coordination of eyes, movement, breathing & internal energy. Relaxation, nutrition improved health & concentration, increased energy, flexibility and clarity of mind. Repeatable up to 12 credits.

Prerequisite: PE 134 with a C- or better or instructor approval.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Develop physical fitness and neuromuscular skill.
2. Develop an understanding of carry over values and the use of leisure time.
3. Develop an appreciation for physical activities.
4. Develop social compatibility.
5. To increase knowledge such as rules, history, terminology, etiquette or health habits.
6. Learn a series of postures and based on Yang Style Tai Ju; how to stand, move, and how to breathe.

PE 237 - Yoga Intermediate

1 Credit(s)

Designed for continuing students who have a basic knowledge of asanas (postures), pranayama (breathing techniques), relaxation and philosophy. Includes discussion and practice. Learn how movement, breathing and nutrition contribute to stress reduction and improved well-being. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Improve postural alignment.
2. Increase flexibility, respiratory and strength functions.
3. Practice intermediate level asanas.
4. Learn the 8-limbs of classical yoga.
5. Experience stress reduction.

PE 242 - Basketball Intermediate

1 Credit(s)

Review and practice of fundamentals and individual skills in daily progressive drill work. Team play may include 3 on 3, 4 on 4 and 5 on 5 game play. Offensive and defensive strategies and techniques will be discussed throughout the term. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Engage in principles of effective teamwork
2. Describe and function within fundamentals of basketball including rules and scoring
3. Demonstrate gains in both individual and team skills
4. Employ appropriate offensive and defensive strategy during basketball play
5. Demonstrate gains in personal fitness
6. Conduct themselves with good sportsmanship and regard to the etiquette of basketball

PE 247 - Volleyball Intermediate

1 Credit(s)

This class will include a review of skills and techniques fundamental to the game. Additional strategies and techniques will be discussed. Previous competitive playing experience recommended. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Engage in principles of effective teamwork

2. Describe and function within fundamentals of volleyball including rules and scoring
3. Demonstrate gains in both individual and team skills
4. Employ appropriate offensive and defensive strategy during volleyball play
5. Demonstrate gains in personal fitness
6. Conduct themselves with good sportsmanship and regard to the etiquette of volleyball

Physical Education - Athletics

PEAT 100 - Cross Country - Women's Conditioning 1

1 Credit(s)

A conditioning class designed for students interested in participating in competitive cross-country running. Emphasis on conditioning and endurance. Previous cross country experience recommended. Ability level evaluated first week with 5k endurance test. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Gain overall conditioning to be applied to a cross country race.
2. Develop knowledge of training principles, strategies, methodology, terminology, regulations and history in the sports.
3. Progressive development and improvement in specific event areas.

PEAT 101 - Cross Country - Women's Skills 1

1 Credit(s)

Theory, analysis, advanced skills and techniques for skilled performers and individuals who are preparing for a competitive cross country experience. Course covers terminology, regulations, and healthy lifestyle choices. Previous cross country experience recommended. Ability level evaluated first week with 5k endurance test. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Gain overall knowledge of skills to be applied to Cross Country events.
2. Develop knowledge of training principles, strategies, methodology, terminology, regulations and history in the sport.
3. Progressive development and improvement in specific event areas.

PEAT 105 - Cross Country - Men's Conditioning 1

1 Credit(s)

A conditioning class designed for students interested in participating in competitive cross-country running. Emphasis on conditioning and endurance. Previous cross country experience recommended. Repeatable up to 12 credits.

Learning Outcomes

Upon completion of this course the student will be able to:

1. To gain overall conditioning to be applied to a cross country race.
2. To develop knowledge of training principles, strategies, methodology, terminology, regulations and history in the sports.
3. Progressive development and improvement in specific event areas.

PEAT 106 - Cross Country - Men's Skills 1

1 Credit(s)

Theory, analysis, advanced skills and techniques for skilled performers and individuals who are preparing for a competitive cross country experience. Course covers terminology, regulations, and healthy lifestyle choices. Previous cross country experience recommended. Repeatable up to 12 credits.

Learning Outcomes

Upon completion of this course the student will be able to:

1. Gain overall knowledge of skills to be applied to Cross Country events.
2. Develop knowledge of training principles, strategies, methodology, terminology, regulations and history in the sport.
3. Progressive development and improvement in specific event areas.

PEAT 110 - Volleyball - Women's Conditioning 1

1 Credit(s)

A conditioning class designed for students with an interest in participating in competitive Volleyball. Strong emphasis on individual conditioning, endurance, exercise principles, and the development of fundamentals. Previous competitive playing experience recommended. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student will:

1. Gain knowledge and understanding of volleyball conditioning.
2. To develop and execute basic skills associated with volleyball conditioning.
3. To provide progressive development of volleyball conditioning.

4. Understand individual concepts and philosophies such as systems of play, and tactical awareness.
5. Gain knowledge of rules of the game associated with volleyball.
6. Understand how to analyze the game of volleyball from a player's view.
7. Understand sportsmanship.

PEAT 111 - Volleyball - Women's Skills 1

1 Credit(s)

This is a conditioning class designed for students with an interest in participating in competitive Volleyball. Strong emphasis on individual conditioning, endurance, exercise principles, and the development of fundamentals. Previous competitive playing experience recommended. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student will:

1. Develop individual skills associated with volleyball at the varsity level.
2. Gain knowledge of rules of the game associated with volleyball at the varsity level.
3. Understand how to analyze the game of volleyball.
4. Understand sportsmanship.
5. Understand team concepts and philosophies such as formations, systems of play, and tactical awareness.
6. Develop and understanding of proper nutrition needed for volleyball at the varsity or collegiate level.

PEAT 115 - Soccer - Women's Conditioning 1

1 Credit(s)

A conditioning class designed for students with an interest in participating in competitive soccer. Emphasis on conditioning, exercise principles, and the development of fundamentals. Previous competitive playing experience recommended. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Maintain and/or increase fitness level.
2. Develop a soccer exercise plan.
3. Have improved speed and agility.
4. Knowledge of injury preventions through increased fitness.
5. Apply improved fitness to the game.
6. Fitness and nutrition effects on health and stress management.

PEAT 116 - Soccer - Women's Skills 1

1 Credit(s)

Theory, analysis, skills and techniques for students preparing for a competitive soccer experience. Course covers terminology, rules, strategy, conduct, sportsmanship and healthy lifestyle choices. Previous competitive playing experience recommended. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Understand the principles of attacking 1v1-3v3.
2. Understand the principles of defending 1v1-3v3.
3. Understand the importance of attacking and defensive shape on the game.
4. Learn various tactical systems i.e. 4-3-3, 4-4-2, 4-5-1.

PEAT 120 - Soccer - Men's Conditioning 1

1 Credit(s)

A conditioning class designed for students with an interest in participating in competitive soccer. Emphasis on conditioning, exercise principles, and the development of fundamentals. Previous competitive playing experience recommended.

Learning Outcomes

Upon completion of this course the student will be able to:

1. Maintain and/or increase fitness level.
2. Develop a soccer exercise plan.
3. Have improved speed and agility.
4. Knowledge of injury preventions through increased fitness.
5. Apply improved fitness to the game.
6. Fitness and nutrition effects on health and stress management.

PEAT 121 - Soccer - Men's Skills 1

1 Credit(s)

Theory, analysis, skills and techniques for male students preparing for a competitive soccer experience. Course covers terminology, rules, strategy, conduct, sportsmanship and healthy lifestyle choices. Previous competitive playing experience recommended. Repeatable up to 12 credits.

Learning Outcomes

Upon completion of this course the student will be able to:

1. Understand the principles of attacking 1v1-3v3.
2. Understand the principles of defending 1v1-3v3.
3. Understand the importance of attacking & defensive shape on the game.
4. Learn various tactical systems i.e. 4-3-3, 4-4-2, 4-5-1.

PEAT 125 - Basketball – Men's Conditioning 1

1 Credit(s)

A conditioning class designed for students interested in participating in competitive basketball. Strong emphasis on conditioning, endurance and fundamentals.

Previous competitive playing experience recommended. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Gain knowledge and understanding of basketball skills and rules of the game.
2. Develop and execute advanced skills associated with basketball.
3. Provide progressive development of basketball skills.
4. Provide a competitive experience for the participants.

PEAT 126 - Basketball - Men's Skills 1

1 Credit(s)

Theory, analysis, skills and techniques for students preparing for a competitive basketball experience. Covers terminology, rules, strategy, conduct, sportsmanship and healthy lifestyle choices. Men's ball and Men's NCAA rules. Previous competitive playing experience highly recommended. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Gain knowledge and understanding of basketball skills & rules of the game.
2. Develop and execute advanced skills associated with basketball.
3. Provide progressive development of basketball skills.
4. Provide a competitive experience for the participants.

PEAT 130 - Basketball - Women's Conditioning 1

1 Credit(s)

A conditioning class designed for students interested in participating in competitive basketball. Strong emphasis on conditioning, endurance and fundamentals. Previous competitive playing experience recommended. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Gain knowledge and understanding of basketball conditioning.
2. Develop and execute basic skills associated with basketball conditioning.
3. Provide progressive development of basketball conditioning.
4. Provide enjoyable experiences for the participants.

PEAT 131 - Basketball Women's Skills 1

1 Credit(s)

Theory, analysis, skills and techniques for students preparing for a competitive basketball experience. Covers terminology, rules, strategy, conduct, sportsmanship and healthy lifestyle choices. Women's ball and Women's NCAA rules will be used. Previous competitive playing experience recommended. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Gain knowledge and understanding of basketball skills and rules of the women's game.
2. Develop and execute advanced skills associated with basketball.
3. Provide progressive development of basketball skills.
4. Provide competitive experiences for the participants.

PEAT 135 - Track and Field - Women's Conditioning 1

1 Credit(s)

A conditioning class designed for students interested in participating in competitive track and field. Emphasis on conditioning, development of fundamentals and skills. Previous competitive track and field experience recommended. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Develop physical conditioning to be applied to a particular event(s) in Track and Field.

2. Develop knowledge of specific track and field conditioning drills, including strength training programs.

3. Progressive development and improvement in specific event areas.

PEAT 136 - Track and Field - Women's Skills 1

1 Credit(s)

Theory, analysis, advanced skills and techniques for skilled performers and individuals who are preparing for a competitive track and field experience. Course covers terminology, regulations, and healthy lifestyle choices. Previous competitive track and field experience recommended. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Demonstrate physical skills that can be applied to a particular event(s) in Track & Field.
2. Understand specific track and field drills that promote event specific skill development.
3. Show progressive development of refined motor skills that is pertinent to a particular event.

PEAT 140 - Track and Field - Men's Conditioning 1

1 Credit(s)

A conditioning class designed for male students interested in participating in competitive track and field. Emphasis on conditioning, development of fundamentals and skills. Previous competitive track and field experience recommended. Repeatable up to 12 credits.

Learning Outcomes

Upon completion of this course the student will be able to:

1. To develop physical conditioning to be applied to a particular event(s) in Track and Field.
2. To develop knowledge of specific track and field conditioning drills, including strength training programs.
3. Progressive development and improvement in specific event areas.

PEAT 141 - Track and Field - Men's Skills 1

1 Credit(s)

Theory, analysis, advanced skills and techniques for skilled performers and individuals who are preparing for a competitive track and field experience. Course covers terminology, regulations, and healthy lifestyle choices. Previous competitive track and field experience recommended. Repeatable up to 12 credits.

Learning Outcomes

Upon completion of this course the student will be able to:

1. To develop physical conditioning to be applied to a particular event(s) in Track and Field.
2. To develop knowledge of specific track and field conditioning drills, including strength training programs.
3. Progressive development and improvement in specific event areas.

PEAT 145 - Baseball - Men's Conditioning 1

1 Credit(s)

A conditioning class designed for students interested in participating in competitive baseball. Emphasis on conditioning and development of fundamentals. Previous competitive playing experience recommended. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Develop and refine techniques, fundamentals and skills necessary to compete in a collegiate baseball experience.
2. Develop and understand theories, strategies involved in collegiate-level baseball.
3. Develop and maintain sound conditioning skills/habits.
4. Increase knowledge as it pertains to rules, history, terminology, etiquette and health habits.
5. Develop physical fitness and neuromuscular skills.
6. Develop an understanding of carry over value and the use of leisure time.

PEAT 146 - Baseball - Men's Skills 1

1 Credit(s)

Theory, analysis, skills and techniques for skilled performers and individuals who are preparing for a competitive baseball experience. Course covers terminology, regulations, strategy, conduct, sportsmanship and healthy lifestyle choices. Previous competitive playing experience recommended. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Develop and refine basic technique, fundamentals and skills necessary to compete in an inter-collegiate baseball experience.
2. Develop and understand basic theories, strategies involved in an inter-collegiate level baseball experience.
3. Develop and maintain sound conditioning skills/habits.
4. Develop and nurture skills as they relate to sportsmanship and integrity within a competitive environment.

PEAT 200 - Cross Country Women's Conditioning 2

1 Credit(s)

An advanced conditioning class that is designed for students interested in competitive cross-country running at the elite level. Strong emphasis on conditioning and endurance. Previous competitive cross country running experience highly recommended. Ability level evaluated first week with 5k endurance test. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Gain overall conditioning to be applied to a cross country race.
2. Develop knowledge of training principles, strategies, methodology, terminology, regulations and history in the sports.
3. Progressive development and improvement in specific events.

PEAT 201 - Cross Country Women's Skills 2

1 Credit(s)

Cross country running experience highly recommended. Theory, analysis, advanced skills and techniques for skilled performers and individuals preparing for a competitive cross country experience at the elite level. Course covers terminology, regulations, and healthy lifestyle choices. Ability level evaluated first week with 5k endurance test. Repeatable up to 12 credits.

Prerequisite: PEAT 101 or similar cross country running experience highly recommended.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Gain overall knowledge of skills to be applied to Cross Country events.
2. Develop knowledge of training principles, strategies, methodology, terminology, regulations and history in the sport.

PEAT 205 - Cross Country - Men's Conditioning 2

1 Credit(s)

An advanced conditioning class that is designed for students interested in competitive cross-country running at the elite level. Strong emphasis on conditioning and endurance. Previous competitive cross country running experience highly recommended. Repeatable up to 12 credits.

Prerequisite: PEAT 105

Learning Outcomes

Upon completion of this course the student will be able to:

1. To gain overall conditioning to be applied to a cross country race.
2. To develop knowledge of training principles, strategies, methodology, terminology, regulations and history in the sports.
3. Progressive development and improvement in specific events.

PEAT 206 - Cross Country- Men's Skills 2

1 Credit(s)

A highly advanced conditioning class that is designed for students interested in competitive cross country at the elite level. Strong emphasis on conditioning, exercise principles, and the development of fundamentals. Previous competitive cross country experience highly recommended. Repeatable up to 12 credits.

Prerequisite: PEAT 106

Learning Outcomes

Upon completion of this course the student will be able to:

1. Gain overall knowledge of skills to be applied to Cross Country events.
2. Develop knowledge of training principles, strategies, methodology, terminology, regulations and history in the sport.
3. Progressive development and improvement in specific event areas.

PEAT 210 - Volleyball - Women's Conditioning 2

1 Credit(s)

A highly advanced conditioning class that is designed for students interested in competitive volleyball at the elite level. Strong emphasis on conditioning, exercise principles, and the development of fundamentals. Previous competitive playing experience highly recommended. Repeatable up to 12 credits.

Prerequisite: PEAT 110

Learning Outcomes

Upon completion of this course the student will be able to:

1. Gain knowledge and understanding of physical conditioning specific to the sport of volleyball at the varsity level.
2. Gain knowledge and understanding of skills specific to the sport of volleyball at the varsity level
3. Develop knowledge of Olympic weight lifting techniques appropriate to volleyball at the varsity level
4. Understand team concepts and philosophies such as team formations, systems of play, and tactical awareness.
5. Gain knowledge of rules of the game associated with volleyball at the varsity level
6. Understand how to analyze the game of volleyball from a player's view
7. Understand sportsmanship

PEAT 211 - Volleyball - Women's Skills 2

1 Credit(s)

Theory, advanced skills and techniques for students preparing for a competitive volleyball experience at an elite level. Course covers terminology, rules, strategies, conduct, sportsmanship and healthy lifestyle choices. Previous competitive playing experience at the varsity highly recommended.

Prerequisite: PEAT 111

Learning Outcomes

Upon completion of this course the student will be able to:

1. Develop individual skills associated with volleyball at the varsity level
2. Gain knowledge of rules of the game associated with volleyball at the varsity level
3. Understand how to analyze the game of volleyball
4. Understand sportsmanship
5. Understand team concepts and philosophies such as team formations, systems of play, and tactical awareness
6. Develop and understanding of proper nutrition needed for volleyball at the varsity or collegiate level

PEAT 215 - Soccer - Women's Conditioning 2

1 Credit(s)

A highly advanced conditioning class that is designed for students interested in competitive soccer at the elite level. Strong emphasis on conditioning, exercise principles, and the development of fundamentals. Previous competitive playing experience highly recommended. Repeatable up to 12 credits.

Prerequisite: PEAT 115 or similar experience.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Maintain and/or increase fitness level.
2. Learn to evaluate and improve one's own fitness.
3. Have improved speed and agility and learn the key components of training i.e. work vs recovery times.
4. Knowledge of injury preventions through increased fitness.
5. Tactical application of fitness to the game.
6. Fitness and nutrition effects on health and stress management.

PEAT 216 - Soccer - Women's Skills 2

1 Credit(s)

Theory, advanced skills and techniques for students preparing for a competitive soccer experience at an elite level. Course covers terminology, rules, strategies, conduct, sportsmanship and healthy lifestyle choices. Previous competitive playing experience highly recommended. Repeatable up to 12 credits.

Prerequisite: PEAT 116 or similar experience.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Understand the principles of attacking 1v1-3v3.
2. Understand the principles of defending 1v1-3v3.
3. Understand the importance of attacking and defensive shape on the game.
4. Learn various tactical systems i.e. 4-3-3, 4-4-2, 4-5-1.

PEAT 220 - Soccer - Men's Conditioning 2

1 Credit(s)

A highly advanced conditioning class that is designed for students interested in competitive soccer at the elite level. Strong emphasis on conditioning, exercise principles, and the development of fundamentals. Previous competitive playing experience highly recommended. Repeatable up to 12 credits.

Prerequisite: PEAT 120

Learning Outcomes

Upon completion of the course the student will be able to:

1. Maintain and/or increase fitness level.
2. Learn to evaluate and improve one's own fitness.
3. Have improved speed and agility and learn the key components of training i.e. work vs recovery times.
4. Knowledge of injury preventions through increased fitness.
5. Tactical application of fitness to the game.
6. Fitness and nutrition effects on health and stress management.

PEAT 221 - Soccer-men's Skills 2

1 Credit(s)

Theory, advanced skills and techniques for male students preparing for a competitive soccer experience at an elite level. Course covers terminology, rules, strategies, conduct, sportsmanship and healthy lifestyle choices. Previous competitive playing experience highly recommended.

Prerequisite: PEAT 121

Learning Outcomes

Upon course completion the student will be able to:

1. Understand the principles of attacking 1v1-3v3.
2. Understand the principles of defending 1v1-3v3.
3. Understand the importance of attacking and defensive shape on the game.
4. Learn various tactical systems i.e. 4-3-3, 4-4-2, 4-5-1.

PEAT 225 - Basketball - Men's Conditioning 2

1 Credit(s)

Advanced conditioning class designed for students interested in participating in competitive basketball at an elite level. Strong emphasis on conditioning, endurance and fundamentals. Previous competitive playing experience highly recommended. Repeatable up to 12 credits.

Prerequisite: PEAT 125 or similar experience

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Gain knowledge and understanding of basketball skills and rules of the game.
2. Develop and execute advanced skills associated with basketball.
3. Provide progressive development of basketball skills.
4. Provide a competitive experience for the participants.

PEAT 226 - Basketball - Men's Skills 2

1 Credit(s)

Theory, advanced skills and techniques for students preparing for a competitive basketball experience at an elite level. Covers terminology, rules, strategies, conduct, sportsmanship and healthy lifestyle choices. Men's ball and NCAA rules. Competitive playing experience highly recommended. Repeatable up to 12 credits.

Prerequisite: PEAT 126 or similar experience

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Gain knowledge and understanding of basketball skills and rules of the game.
2. Develop and execute advanced skills associated with basketball.
3. Provide progressive development of basketball skills.
4. Provide a competitive experience for the participants.

PEAT 230 - Basketball - Women's Conditioning 2

1 Credit(s)

Advanced conditioning class designed for students interested in participating in competitive basketball at an elite level. Strong emphasis on conditioning, endurance and fundamentals. Previous competitive playing experience highly recommended. Repeatable up to 12 credits.

Prerequisite: PEAT 130 or similar experience

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Gain knowledge and understanding of basketball conditioning.
2. Develop and execute basic skills associated with basketball conditioning.
3. Provide progressive development of basketball conditioning.
4. Provide enjoyable experiences for the participants.

PEAT 231 - Basketball - Women's Skills 2

1 Credit(s)

Theory, advanced skills and techniques for students preparing for a competitive basketball experience at an elite level. Covers terminology, rules, strategies, conduct, sportsmanship and healthy lifestyle choices. Women's ball and NCAA

rules. Competitive playing experience highly recommended. Repeatable up to 12 credits.

Prerequisite: PEAT 131 or similar experience

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Gain knowledge and understanding of basketball skills and rules of the game
2. Develop and execute advance skills associated with basketball
3. Provide progressive development of basketball skills
4. Provide competitive experience for the participants

PEAT 235 - Track and Field - Women's Conditioning 2

1 Credit(s)

Advanced conditioning class designed for students interested in participating in competitive track and field at an elite level. Emphasis on conditioning, development of fundamentals and skills. Previous competitive track and field experience highly recommended. Repeatable up to 12 credits.

Prerequisite: PEAT 135 or similar experience

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Develop physical conditioning to be applied to a particular event(s) in Track and Field.
2. Develop knowledge of specific track and field conditioning drills, including strength training programs.
3. Progressive development and improvement in specific event areas. Build off of Conditioning 1 training (2nd year students)

PEAT 236 - Track and Field - Women's Skills 2

1 Credit(s)

Advanced course that covers theory, analysis, skills and techniques for individuals who are preparing for a competitive track and field experience at an elite level. Covers terminology, regulations, and healthy lifestyle choices. Previous competitive track and field experience highly recommended. Repeatable up to 12 credits.

Prerequisite: PEAT 136 or similar experience

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Demonstrate advanced physical skills that can be applied to a particular event(s) in Track & Field.
2. Understand specific track and field drills that promote event specific skill development.
3. Show progressive development of refined motor skills that is pertinent to a particular event.
4. Compete at the NWAACC college level.

PEAT 240 - Track and Field - Men's Conditioning 2

1 Credit(s)

Advanced conditioning class designed for students interested in participating in competitive track and field at an elite level. Emphasis on conditioning, development of fundamentals and skills. Previous competitive track and field experience highly recommended.

Prerequisite: PEAT 141

Learning Outcomes

Upon completion of this course the student will be able to:

1. To develop physical conditioning to be applied to a particular event(s) in Track and Field.
2. To develop knowledge of specific track and field conditioning drills, including strength training programs.
3. Progressive development and improvement in specific event areas. Build off of Conditioning 1 training (2nd year students).

PEAT 241 - Track and Field - Men's Skills 2

1 Credit(s)

Advanced course that covers theory, analysis, skills and techniques for individuals who are preparing for a competitive track and field experience at an elite level. Covers terminology, regulations, and healthy lifestyle choices. Previous competitive track and field experience highly recommended. Repeatable up to 12 credits.

Prerequisite: PEAT 141

Learning Outcomes

Upon completion of this course the student will be able to:

1. Demonstrate advanced physical skills that can be applied to a particular event(s) in Track & Field.

2. Understand specific track and field drills that promote event specific skill development.
3. To show progressive development of refined motor skills that is pertinent to a particular event.
4. Compete at the NWAACC college level.

PEAT 245 - Baseball - Men's Conditioning 2

1 Credit(s)

An advanced conditioning class designed for students interested in participating in competitive baseball at an elite level. Emphasis on conditioning and development of fundamentals. Previous competitive playing experience highly recommended. Repeatable up to 12 credits.

Prerequisite: PEAT 145 or similar experience

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Develop and refine advanced techniques, fundamentals and skills necessary to compete in a collegiate baseball experience.
2. Develop and understand advanced theories, strategies involved in collegiate-level baseball.
3. Develop and maintain accelerated conditioning skills/habits.
4. Have an advanced increase in knowledge as it pertains to rules, history, terminology, etiquette and health habits.
5. Develop advanced physical fitness and neuromuscular skills.
6. Develop an advanced understanding of carry over value and the use of leisure time.

PEAT 246 - Baseball - Men's Skills 2

1 Credit(s)

Advanced course in theory, analysis, skills and techniques for individuals who are preparing for a competitive baseball experience at an elite level. Covers terminology, regulations, strategy, conduct, sportsmanship and healthy lifestyle choices. Competitive playing experience highly recommended. Repeatable up to 12 credits.

Prerequisite: PEAT 146 or similar experience

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Develop and refine advanced team and individual techniques, fundamentals and necessary skills in an inter-collegiate baseball experience.
2. Develop and comprehend advanced theories, team and individual strategies involved in an inter-collegiate level basic experience.
3. Develop, demonstrate accelerated conditioning skills/habits.
4. Develop advanced skills as they relate to sportsmanship and integrity within a competitive collegiate environment.

Physical Education - Outdoor Education

PEO 101 - Downhill Skiing/Snowboarding Beg.-Int.-Adv

1 Credit(s)

Instruction and practice in fundamental skills of snowboarding and downhill skiing. Instruction provided for beginner through advanced skill level. Classes held at an Oregon ski area. Fees cover transportation, lift ticket, and lessons. Equipment rentals not included. Repeatable up to 12 credits.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Gain overall muscle strength and endurance.
2. To develop the knowledge of basic level and advanced level exercises.
3. To experience common exercise programs and routines.

Physical Therapist Assistant

PTA 100 - Introduction to Physical Therapy

3 Credit(s)

This course introduces the roles and responsibilities of physical therapy providers. Topics include history, practice patterns, laws, professionalism, communication, and information literacy.

Prerequisite: Admission to the PTA program.

Prerequisite/Corequisite: PTA 101L or PTA 101LR with a grade of C or better.

Corequisite: PTA 101

Learning Outcomes

Students who successfully complete this course will be able to:

1. Explain historical impacts and the role of APTA/APTA Oregon on contemporary PT Practice

2. Explain physical therapy education and credentialing to others
3. Describe and define physical therapy practice patterns, the health care team and consumers of physical therapy
4. Describe the Americans with Disabilities Act and its impact historically and on contemporary society
5. Identify opportunities for outreach and service to groups underserved or underrepresented in physical therapy
6. Use technology appropriately, efficiently, and effectively for course assignments, creating instructional material using web-based technology. Using technology for self-assessments, and for peer and instructor communication
7. Demonstrate the incorporation of principles of learning when educating others
8. Develop a PTA career development plan
9. Describe and define interventions and expectations for the PTA in patient-client management

PTA 101 - Introduction to Clinical Practice 1

5 Credit(s)

This course introduces physical therapy practice patterns for acute and chronic soft tissue injuries across the healing continuum. Students are introduced to principles of body mechanics, gross mobility training, positioning, biophysical agents, and aquatic therapy. Evidence-based practice is also introduced.

Prerequisite: Admission into the PTA program.

Prerequisite/Corequisite: PTA 101L or PTA 101LR with a grade of C or better.

Corequisite: PTA 100

Learning Outcomes

Students who successfully complete this course will be able to:

1. Identify the role of the PTA in the provision of physical therapy interventions included in this course
2. Develop an identity as an SPTA through timely and collaborative communication and problem-solving with student colleagues and instructors throughout course discussions and electronic communications
3. Apply problem-solving algorithms and classification models (i.e., International Classification of Functioning, Disability, and Health) to develop clinical decision making for selecting, modifying, and discontinuing PT interventions included in this course
4. Identify activities and behaviors that demonstrate respect for the patient (e.g., informed consent and right to refuse, draping, examination of possible social and cultural biases and differences, etc.)
5. Recognize situations that require additional information, direction, or supervision from the physical therapist for PT interventions and case simulations included in this course
6. Define evidence-based practice and principles as it is used in physical therapy
7. Integrate appropriate evidence-based resources to support assertions and claims in discussions
8. Define principles of motor learning theory that are used during patient encounters to optimize movement and prevent injury
9. Describe soft tissue disorders in terms of pathological mechanisms, epidemiology, common diagnostic procedures, management, and rehabilitation
10. Describe the influence of soft tissue healing stages on selecting and applying interventions included in this course
11. Describe theory, therapeutic benefits/outcomes, and application (precautions, contraindications, and procedures) of interventions used to promote healing, functional recovery, and pain management:
 - 11a. body mechanics training/proper lifting techniques
 - 11b. positioning
 - 11c. basic wheelchair mobility and transport
 - 11d. transfers
 - 11e. superficial and deep thermal agents
 - 11f. cryotherapy
 - 11g. electrotherapeutic agents
 - 11h. compression therapies
 - 11i. hydrotherapy
 - 11j. light
 - 11k. soft tissue mobilization
 - 11l. passive range of motion
12. Demonstrate competence in interpreting data collected during a physical therapy patient encounter, specifically:
 - 12a. Relevant subjective information provided by the patient independently or with prompts
 - 12b. Vital signs (HR, RR, BP, O2 saturation, temperature)

- 12c. Standardized pain assessments
- 12d. Skin condition – (e.g. color, capillary refill, swelling)
- 12e. Movement strategies – body mechanics (lifting, carrying, bending, standing)
- 12f. Anthropometric measures related to wheelchair fitting
- 12g. Assistance provided during a patient transfer or movement activity (e.g., physical, equipment, cuing, level of assistance; functional independence measures (FIM))
- 12h. Light touch sensation integrity prior to administering biophysical agents
13. Describe objective data that should be included in documentation of PTA-patient encounters for interventions included in this course (e.g., parameters, position, location/body region, time, intensity, sets/repetitions, equipment, etc.)
14. Use proper medical format when documenting simulated patient encounters included in the course

PTA 101L - Introduction to Clinical Practice 1 Lab

2 Credit(s)

This co-requisite lab to PTA 101 allows for practice of physical therapy interventions for pain and soft tissue injuries. Topics and skills include safe application of biophysical agents, exercise, gross mobility training, positioning, compression and taping, and effective communication/documentation.

Prerequisite: Admission into the PTA program

Corequisite: PTA 101

Learning Outcomes

Students who successfully complete this course will be able to:

1. Demonstrate competency in weight bearing transfers for patients requiring a range of assistance in the following situations: bed to/from wheelchair, bed positioning and repositioning, supine to/from sitting, sit to/from stand
2. Demonstrate competency in wheelchair locomotion, management and training for simulated patients requiring a range of assistance
3. Use principles of motor learning to effectively instruct patients in performing bed mobility, positioning, and transfers
4. Demonstrate competency in applying the selected biophysical agents to a person with a simulated musculoskeletal or neuromuscular impairment: a) compression devices, b) ice massage, c) ice pack, d) hot pack, e) ultrasound, f) electrical stimulation
5. Demonstrate competency in selected manual therapy techniques during a simulated case: a) passive range of motion, b) basic massage
6. Demonstrate competency in data collection during a simulated encounter: a) vital signs (HR, RR, O2 sat, BP), b) skin condition, c) appropriateness of fit for a standard wheelchair, d) assistance levels (e.g. level of supervision, percentage physical assist)
7. Demonstrate respect for the patient through appropriate verbal, non-verbal, and written workplace communication during simulated practice
8. Identify contextual factors that influence clinical decision-making during simulated practice
9. Demonstrate behaviors during simulated practice that reflect an emerging understanding of the PTA role in the physical therapy service, including: a) reviewing health records prior to initiating treatment, b) interviewing the patient for relevant information related to current and prior levels of function, c) identifying situations when selected interventions should not be performed based on the patient response, d) adjusting selected interventions based on the patient response, and e) assessing the patient response during the encounter
10. Complete accurate documentation of subjective and objective information and clinical outcomes during simulated practice applying selected interventions

PTA 101LR - Introduction to Clinical Practice 1 Lab-Rogue

2 Credit(s)

This co-requisite lab to PTA 101 allows for practice of physical therapy interventions for pain and soft tissue injuries. Topics and skills include safe application of physical agents, exercise, gross mobility training, positioning, and effective communication/documentation. Course taught at Rogue Community College.

Prerequisite: Admission into PTA program

Corequisite: PTA 101

Learning Outcomes

Students who successfully complete this course will be able to:

1. Demonstrate competency in weight bearing transfers for patients requiring a range of assistance in the following situations: bed to/from wheelchair, bed positioning and repositioning, supine to/from sitting, sit to/from stand
2. Demonstrate competency in wheelchair locomotion, management and training for simulated patients requiring a range of assistance

3. Use principles of motor learning to effectively instruct patients in performing bed mobility, positioning, and transfers
4. Demonstrate competency in applying the selected biophysical agents to a person with a simulated musculoskeletal or neuromuscular impairment: a) compression devices, b) ice massage, c) ice pack, d) hot pack, e) ultrasound, f) electrical stimulation
5. Demonstrate competency in selected manual therapy techniques during a simulated case: a) passive range of motion, b) basic massage
6. Demonstrate competency in data collection during a simulated encounter: a) vital signs (HR, RR, O2 sat, BP), b) skin condition, c) appropriateness of fit for a standard wheelchair, d) assistance levels (e.g. level of supervision, percentage physical assist)
7. Demonstrate respect for the patient through appropriate verbal, non-verbal, and written workplace communication during simulated practice
8. Identify contextual factors that influence clinical decision-making during simulated practice
9. Demonstrate behaviors during simulated practice that reflect an emerging understanding of the PTA role in the physical therapy service, including: a) reviewing health records prior to initiating treatment, b) interviewing the patient for relevant information related to current and prior levels of function, c) identifying situations when selected interventions should not be performed based on the patient response, d) adjusting selected interventions based on the patient response, and e) assessing the patient response during the encounter
10. Complete accurate documentation of subjective and objective information and clinical outcomes during simulated practice applying selected interventions

PTA 103 - Introduction to Clinical Practice 2

5 Credit(s)

The course is designed to assist PTA students in gaining a greater understanding of single organ dysfunction and subsequent effects on patient function. Anatomy, physiology, etiology, and theory are integrated with clinical considerations for effective physical therapy treatment.

Prerequisite: PTA 101 and (PTA 101L or PTA 101LR) with a grade of C or better, and (BI 102I or BI 233 or HP 152) with a grade of C- or Pass.

Corequisite: PTA 103L or PTA 103LR

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Develop effective strategies to coordinate care and prevent the spread of infection to self and others.
2. Apply the International Classification of Function and Disability (ICF) when describing body system conditions and their associated effects on the movement system.
3. Recognize signs, symptoms, and health record data that indicate actual or possible adverse physiological effects in the cardiovascular, pulmonary, neuromuscular, gastrointestinal genitourinary, and endocrine, and integument systems.
4. Collect subjective and objective information from patients with general medical conditions that inform decisions to communicate with the supervising PT, and clinical decisions to proceed, modify, and discontinue physical therapy plan of care implementation based.
5. Develop simulated physical therapy treatment sessions for patients with general medical conditions based on sound clinical reasoning, evidence, patient/client centered approaches, and the physical therapy plan of care.
6. Select interventions to improve aerobic capacity and endurance, integument integrity, self-care, motor function, and effective use of assistive and adaptive equipment in children and adults with general medical conditions.
7. Evaluate sample documentation from a PTA for alignment with expectations of practice setting and plan of care coherency (accuracy, medically reasonable and necessary, billing guidelines).
8. Identify how PTAs are agents for advocating for safety, public health and health promotion, disease prevention, and accessibility for children and adults.
9. Assess the strength of related clinical research in term of validity, reliability, significance, and future practice implications.

PTA 103L - Introduction to Clinical Practice 2 Lab

2 Credit(s)

This co-requisite lab to PTA 103 allows students to develop competency in clinical skills, tests, and measures for optimizing movement in patients/clients with common cardiopulmonary and age-related contributors encountered in inpatient and outpatient healthcare settings. Students develop effective communication with the patients and the healthcare team through simulated case-based skills

practice.

Prerequisite/Corequisite: PTA 101 And PTA 101L with a grade of C or better.

Corequisite: PTA 103

Learning Outcomes

Students who successfully complete this course will be able to:

1. Demonstrate competency in universal precautions and preventative procedures that protect the health and safety of patients, self, and others
2. Demonstrate competency in implementing appropriate mobility interventions to improve endurance, aerobic capacity, airway clearance, strength, safety, and function in patients with general medical conditions
3. Demonstrate competency in implementing therapeutic activities to improve posture, protect skin, and support self-care in domestic, work, community, social, and civic life for patients with general medical conditions
4. Demonstrate competency in performing data collection, including tests and measures for aerobic capacity, assistive and prosthetic devices, cognition, function, muscle performance, posture, ventilation, respiration, and sensation
5. Develop interprofessional and patient communication skills that support safe, legal, and patient-centered physical therapy practice
6. Identify basic concepts in professional literature, including validity and reliability

PTA 103LR - Introduction to Clinical Practice 2 Lab-Rogue

2 Credit(s)

PTA 103 This co-requisite lab to PTA 103 allows students to develop competency in clinical skills, tests, and measures for optimizing movement in patients/clients with common cardiopulmonary and age-related contributors encountered in inpatient and outpatient healthcare settings. Students develop effective communication with the patients and the healthcare team through simulated case-based skills practice. Course taught at Rogue Community College.

Prerequisite/Corequisite: PTA 101 and PTA 101LR with a grade of C or better.

Corequisite: PTA 103

Learning Outcomes

Students who successfully complete this course will be able to:

1. Demonstrate competency in universal precautions and preventative procedures that protect the health and safety of patients, self, and others
2. Demonstrate competency in implementing appropriate mobility interventions to improve endurance, aerobic capacity, airway clearance, strength, safety, and function in patients with general medical conditions
3. Demonstrate competency in implementing therapeutic activities to improve posture, protect skin, and support self-care in domestic, work, community, social, and civic life for patients with general medical conditions
4. Demonstrate competency in performing data collection, including tests and measures for aerobic capacity, assistive and prosthetic devices, cognition, function, muscle performance, posture, ventilation, respiration, and sensation
5. Develop interprofessional and patient communication skills that support safe, legal, and patient-centered physical therapy practice
6. Identify basic concepts in professional literature, including validity and reliability

PTA 104 - PT Interventions-Orthopedic Dysfunctions

5 Credit(s)

This course is designed to assist students in gaining a greater understanding of bone tissue disease and disorders, and their effects on function across the lifespan. Anatomy, physiology, etiology, and theory are integrated with clinical considerations for effective physical therapy treatment.

Prerequisite/Corequisite: PTA 103 and PTA 132 with a grade of C or better.

Corequisite: PTA 104L or PTA 104LR

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Describe the anatomy, physiology, and pathophysiology of skeletal system disease and disorders across the lifespan:
 - a Osteoarthritis.
 - b Rheumatoid arthritis.
 - c Fracture.
 - d Intervertebral disc pathology.
 - e Facet joint pathology.
 - f Hypermobility in the extremities.
 - g Hypomobility in the extremities.
 - h Repetitive use syndromes.
 - i Osteoporosis.
 - j Pregnancy-induced syndromes.
 - k Post-operative musculoskeletal conditions.

2. Recognize how tissue healing stage affects physical therapy plan of care implementation.

3. Integrate the ICF domains and disablement models into clinical reasoning and decision-making.

4. Apply motor learning principles to optimize function, activity, and wellness.

5. Select interventions that demonstrate competency in implementing the physical therapy plan of care:

- a Activities of daily living.
- b Assistive/adaptive devices.
- c Body mechanics.
- d Gait training.
- e ROM (P/AA/A/R).
- f Therapeutic exercise.
- g Stabilization.
- h Stretching.
- i Strengthening.
- j Conditioning.
- k Traction.
- l Manual techniques.
- m Scar mobilization.
- n Postural training.
- o IADL training.

6. Uses relevant tests and measures and data collection skills to inform clinical decision making and effective plan of care implementation:

- a Physiological response to position and activity changes.
- b Height, weight, and limb length.
- c Signs and symptoms of misfit (assistive device, orthotic).
- d Level of assist, safety, status (e.g., weight bearing), context.
- e Standardized questionnaires, graphs, behavioral scales, or visual analog scales for pain.
- f Integumentary changes.
- g Activities that aggravate or relieve pain, dyspnea, or other symptoms.
- h Postural alignment.

7. Adjust interventions within the plan of care established by the physical therapist based on patient response.

8. Communicate effectively with the supervising physical therapist when the physical therapy plan of care implementation is adjusted or withheld based on the patient response or physical therapy scope of practice.

9. Instruct patients, family members, and caregivers in supportive techniques to optimize activity, prevent injury, and/or promote wellness.

10. Develop effective workplace and lifelong learning strategies to promote teamwork and collaborative problem-solving.

11. Provide accurate information for billing and reimbursement purposes.

12. Define domestic violence including risk factors and common symptoms of abuse.

PTA 104L - PT Interventions-Orthopedic Dysfunctions Lab

2 Credit(s)

This co-requisite lab for PTA 104 allows for practical application of physical therapy interventions related to orthopedic conditions. Orthotics/prosthetics, traction, balance, therapeutic exercise, body mechanics, patient safety education/home management, and gait training are also covered.

Prerequisite/Corequisite: (PTA 132 and PTA 132L) or PTA 132LR with a grade of C or better.

Corequisite: PTA 104

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Demonstrate competency in responding appropriately to adverse or emergency situations that may be encountered in the physical therapy service.
2. Demonstrate competency in reviewing the medical record for precautions or contraindications that may affect safe participation in the physical therapy plan of care.
3. Demonstrate competency in workplace communication with patients, family, and personnel in order to effectively plan interventions, meet educational needs, support community-based movement and/or wellness initiatives, and/or coordinate with the PT, patient/client/family, and interprofessional team as indicated.
4. Demonstrate competency in selecting and fitting the least restrictive assistive and orthotic devices to optimize participation in gait and activities of daily living.
5. Demonstrate competency in gait training for multiple weight bearing and post-operative situations on level surfaces, stairs, curbs, and ramps.

6. Demonstrate competency in selecting therapeutic exercises for the spine and extremities that integrates ICF framework application (body systems and functions, participation restrictions, and contextual factors) in safely progressing and/or modifying activity according to the physical therapy plan of care.
7. Demonstrate competency in selecting therapeutic activities for the spine and extremities that integrates ICF framework application (body systems and functions, participation restrictions, and contextual factors) in safely progressing and/or modifying activity according to the physical therapy plan of care.
8. Demonstrate competency in identifying parameters and expected outcomes for safe mechanical traction applications in the cervical and lumbar spine.
9. Demonstrate competency in safe manual traction application principles in the cervical and lumbar spine.
10. Demonstrate competency in selecting and performing safe and effective soft tissue mobilization techniques in the extremities.
11. Demonstrate competency in performing data collection, including tests and measures for anthropometric characteristics, endurance, assistive and prosthetic devices, pain, muscle performance, joint integrity and mobility, posture, and gait.
12. Demonstrate competency in documenting relevant information that indicates skilled and medically necessary services or actions based on the patient status and physical therapy plan of care.

PTA 104LR - PT Interventions-Orthopedic Dysfunctions Lab-Rogue

2 Credit(s)

This co-requisite lab for PTA 104 allows students to practice clinical skills, tests, and measures for improving outcomes in patients/clients with orthopedic conditions. Course taught at Rogue Community College.

Prerequisite/Corequisite: PTA 132 And (PTA 132L) Or (PTA 132LR) with a grade of C or better.

Corequisite: PTA 104

Learning Outcomes

Students who successfully complete this course will be able to:

1. Demonstrate competency in responding appropriately to adverse or emergency situations that may be encountered in the physical therapy service
2. Demonstrate competency in reviewing the medical record for precautions or contraindications that may affect safe participation in the physical therapy plan of care
3. Demonstrate competency in workplace communication with patients, family, and personnel in order to effectively plan interventions, meet educational needs, support community-based movement and/or wellness initiatives, and/or coordinate with the PT, patient/client/family, and interprofessional team as indicated
4. Demonstrate competency in selecting and fitting the least restrictive assistive and orthotic devices to optimize participation in gait and activities of daily living
5. Demonstrate competency in gait training for multiple weight bearing and post-operative situations on level surfaces, stairs, curbs, and ramps
6. Demonstrate competency in selecting therapeutic exercises for the spine and extremities that integrates ICF framework application (body systems and functions, participation restrictions, and contextual factors) in safely progressing and/or modifying activity according to the physical therapy plan of care
7. Demonstrate competency in selecting therapeutic activities for the spine and extremities that integrates ICF framework application (body systems and functions, participation restrictions, and contextual factors) in safely progressing and/or modifying activity according to the physical therapy plan of care
8. Demonstrate competency in identifying parameters and expected outcomes for safe mechanical traction applications in the cervical and lumbar spine
9. Demonstrate competency in safe manual traction application principles in the cervical and lumbar spine
10. Demonstrate competency in selecting and performing safe and effective soft tissue mobilization techniques in the extremities
11. Demonstrate competency in performing data collection, including tests and measures for anthropometric characteristics, endurance, assistive and prosthetic devices, pain, muscle performance, joint integrity and mobility, posture, and gait
12. Demonstrate competency in documenting relevant information that indicates skilled and medically necessary services or actions based on the patient status and physical therapy plan of care

PTA 132 - Applied Kinesiology 1

3 Credit(s)

Students apply understanding of lower quarter structures and functions to clinical situations. Emphases on current evidence and clinical reasoning for safe and effective selection of therapeutic exercises and interventions to improve peripheral joint motion and function as indicated within the physical therapy plan of care.

Prerequisite/Corequisite: PTA 101 and (PTA 101L or PTA 101LR) with a grade of C or better.

Corequisite: PTA 132L or PTA 132LR

Learning Outcomes

Students who successfully complete this course will be able to:

1. Apply knowledge of lower extremity bones, landmarks, ligaments, joints, muscles, and nerves for the lower extremity to describe normal and abnormal motion
2. Describe principles of lower extremity biomechanics including laws of motion
3. Select interventions to normalize gait mechanics based on the physical therapy plan of care, clinical evidence, and PTA scope of practice
4. Select an appropriate intervention to normalize lower extremity joint, tissue, or gross mobility based on the physical therapy plan of care, clinical evidence, and PTA scope of practice
5. Use appropriate terminology, tests, and measures when documenting and discussing the lower extremity motion within the movement system
6. Integrate appropriate evidence based resources to support clinical decision making in optimizing movement in the lower extremity

PTA 132L - Applied Kinesiology 1 Lab

2 Credit(s)

This co-requisite lab to PTA 132 allows for practice of physical therapy interventions and data collection based on principles of kinesiology for the lower quarter. Skills include documentation, palpation, goniometry, therapeutic exercise, manual muscle testing, gait and stretching.

Prerequisite/Corequisite: PTA 101 and PTA 101L with a grade of C or better.

Corequisite: PTA 132

Learning Outcomes

Students who successfully complete this course will be able to:

1. Describe and demonstrate basic types of joints and joint movement of the lower extremity
2. Describe and demonstrate biomechanical principles of force and center of gravity as related to human movement
3. Demonstrate clinical observation skills of the lower extremity and describe human motion using proper terminology
4. Perform data collection including observation, anthropometric measurements, goniometry and manual muscle testing of the lower extremity
5. Demonstrate manual muscle testing and muscle length testing procedures for the lower extremity
6. Demonstrate different types of muscle contractions and movements of the lower extremity including their relevance to clinical setting
7. Demonstrate understanding of arthrokinematic principles for the lower extremity
8. Apply laws of motion and simple machines to human motion
9. Identify the structures, motions and functions of the lower extremity
10. Design and demonstrate exercise application for muscles of the lower extremity
11. Demonstrate use of PNF for soft tissue ROM and strengthening for the lower extremity
12. Identify and instruct components of normal gait cycle
13. Describe major gait deviations and pathologies causing those deviations
14. Demonstrate workplace behavior in the laboratory setting
15. Demonstrate clinical rationale and proper documentation of procedures performed on the lower extremity
16. Communicate an understanding of the plan of care developed by the physical therapist to achieve short and long term goals and intended outcomes of the lower extremity
17. Collaborate with peers for a movement analysis project involving a video, written report, and classroom presentation involving the lower extremity

PTA 132LR - Applied Kinesiology 1 Lab

2 Credit(s)

This co-requisite lab to PTA 132 allows for practice of physical therapy interventions and data collection based on principles of kinesiology for the lower quarter. Skills include documentation, palpation, goniometry, therapeutic exercise, manual muscle testing, gait and stretching. Course taught at Rogue Community College.

Prerequisite: PTA 101 and PTA 101LR for a grade of C or better.

Prerequisite/Corequisite: PTA 132 with a grade of C or better.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Describe and demonstrate basic types of joints and joint movement of the lower

quarter in this course

2. Describe and demonstrate biomechanical principles of force and center of gravity as related to human movement
3. Demonstrate clinical observation skills of the lower extremity and describe human motion using proper terminology
4. Perform data collection including observation, anthropometric measurements, goniometry and manual muscle testing of the lower extremity
5. Demonstrate manual muscle testing and muscle length testing procedures for the lower quarter
6. Demonstrate different types of muscle contractions and movements of the lower extremity including their relevance to clinical setting
7. Demonstrate understanding of arthrokinematic principles for the lower extremity
8. Apply laws of motion and simple machines to human motion
9. Identify the structures, motions and functions of the lower extremity
10. Design and demonstrate exercise application for muscles of the lower extremity
11. Demonstrate use of PNF for soft tissue ROM and strengthening for the lower quarter
12. Identify and instruct components of normal gait cycle
13. Describe major gait deviations and pathologies causing those deviations
14. Demonstrate workplace behavior in the laboratory setting
15. Demonstrate clinical rationale and proper documentation of procedures performed on the lower extremity
16. Communicate an understanding of the plan of care developed by the physical therapist to achieve short and long term goals and intended outcomes of the lower extremity
17. Collaborate with peers for a movement analysis project involving a video, written report, and classroom presentation involving the lower extremity

PTA 133 - Applied Kinesiology 2

3 Credit(s)

Students apply understanding of upper body structures and functions to clinical situations. Emphases on current evidence and clinical reasoning for safe and effective selection of therapeutic exercises and interventions to improve peripheral joint motion and function as indicated within the physical therapy plan of care.

Prerequisite/Corequisite: PTA 132 and (PTA 132L or PTA 132LR) with a grade of C or better.

Corequisite: PTA 133L or PTA 133LR

Learning Outcomes

Students who successfully complete this course will be able to:

1. Apply knowledge of spine and upper extremity bones, landmarks, ligaments, joints, muscles, and nerves to describe normal and abnormal motion
2. Describe principles of spinal and upper extremity biomechanics including laws of motion
3. Select interventions to normalize throwing mechanics based on the physical therapy plan of care, clinical evidence, and PTA scope of practice
4. Select an appropriate intervention to normalize spinal and upper extremity joint, tissue, or gross mobility based on the physical therapy plan of care, clinical evidence, and PTA scope of practice
5. Use appropriate terminology, tests, and measures when documenting and discussing the spine and upper extremity motion within the movement system
6. Integrate appropriate evidence based resources to support clinical decision making in optimizing movement in the spine and upper extremity

PTA 133L - Applied Kinesiology 2 Lab

2 Credit(s)

The co-requisite lab to PTA 133 allows for physical therapy skills practice and data collection based on principles of kinesiology for the upper quarter. Skills include palpation, goniometry, therapeutic exercise, manual muscle testing, posture analysis, and documentation.

Prerequisite: PTA 132 and PTA 132L with a grade of C or better.

Corequisite: PTA 133

Learning Outcomes

Students who successfully complete this course will be able to:

1. Analyze normal and abnormal postural alignment and resulting stresses to the spine and surrounding structures
2. Describe and demonstrate phases and structures of respiration
3. Practice clinical observation skills and identify structures and functions of the spine and upper extremity
4. Perform data collection including observation, anthropometric measurements and goniometry of the upper quarter

5. Demonstrate manual muscle testing and muscle length testing procedures for the upper quarter
6. Demonstrate different types of muscle contraction and movement of the trunk and upper extremity including their relevance to clinical setting
7. Demonstrate understanding of arthrokinematic principles of the upper quarter
8. Identify the structures, motions and functions of the trunk and upper quarter
9. Design, demonstrate and instruct exercise application for muscles of the trunk and upper quarter
10. Demonstrate use of PNF for soft tissue ROM and strengthening of the upper extremity
11. Recognize common compensatory strategies and substitutions through the trunk and upper quarter
12. Identify the components and functions of the human hand
13. Demonstrate workplace behavior in the laboratory setting
14. Demonstrate clinical rationale and proper documentation of procedures performed for the spine and upper extremity

PTA 133LR - Applied Kinesiology 2 Lab

2 Credit(s)

The co-requisite lab to PTA 133 allows for physical therapy skills practice and data collection based on principles of kinesiology for the upper quarter. Skills include palpation, goniometry, therapeutic exercise, manual muscle testing, posture analysis, and documentation. Course taught at Rogue Community College.

Prerequisite/Corequisite: PTA 132 AND PTA 132LR for a grade of C.

Corequisite: PTA 133

Learning Outcomes

Students who successfully complete this course will be able to:

1. Analyze normal and abnormal postural alignment and resulting stresses to the spine and surrounding structures
2. Describe and demonstrate phases and structures of respiration
3. Practice clinical observation skills and identify structures and functions of the spine and upper extremity
4. Perform data collection including observation, anthropometric measurements and goniometry of the upper quarter
5. Demonstrate manual muscle testing and muscle length testing procedures for the upper quarter
6. Demonstrate different types of muscle contraction and movement of the trunk and upper extremity including their relevance to clinical setting
7. Demonstrate understanding of arthrokinematic principles of the upper quarter
8. Identify the structures, motions and functions of the trunk and upper quarter
9. Design, demonstrate and instruct exercise application for muscles of the trunk and upper quarter
10. Demonstrate use of PNF for soft tissue ROM and strengthening of the upper extremity
11. Recognize common compensatory strategies and substitutions through the trunk and upper quarter
12. Identify the components and functions of the human hand
13. Demonstrate workplace behavior in the laboratory setting
14. Demonstrate clinical rationale and proper documentation of procedures performed for the spine and upper extremity

PTA 200 - Professionalism, Ethics, and Exam Preparation

4 Credit(s)

This course is designed to prepare the student physical therapist assistant (SPTA) for ethical situations that are common in the clinical setting. The course prepares the SPTA for the licensing exam and further professional development for entry into the workplace.

Prerequisite: Admission into the PTA Program; second-year student.

Corequisite: PTA 203

Learning Outcomes

Students who successfully complete this course will be able to:

1. Value professional association standards, state and federal regulations and the integrity of the PT/PTA relationship through sound decision-making and appropriate workplace conduct
2. Compose a professional resume that thoroughly represents knowledge, skills, and abilities to prospective employers
3. Engage in moral reasoning using various ethical models
4. Identify strategies to advocate for increased healthcare access for historically and emerging underserved populations
5. Identify how reimbursement structures may impact progression through the physical therapy plan of care

6. Demonstrate advocacy for increased access to physical therapy through direct contact with legislators
7. Identify factors that contribute to or challenge a therapeutic alliance in physical therapy services
8. Develop effective strategies to improve mock licensing exam performance

PTA 201 - Physical Therapy and the Older Adult

2 Credit(s)

This course is designed to facilitate understanding of older adults and their needs and to promote concepts of successful aging based on the physical therapy interventions. Dementia, pharmacology, fall prevention, and the PTA's role in the team approach to providing quality care for the older adult will be examined.

Prerequisite: Admission into PTA Program; second-year student.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Identify factors that are part of the aging process that may contribute to or are barriers to an older adult's participation in the plan of care as determined by the PT
2. Evaluate the role of the PT and PTA in assessing how drugs and age-related changes affect mobility and movement safety in the older adult
3. Analyze how common health conditions, physical, cognitive and psychosocial factors encountered in the elderly inform PTA clinical reasoning and judgment when working with older adults
4. Analyze social norms and stigmas that impact access and rights and dignity of geriatric clients including abuse, ageism and infantilizing geriatric clients. Identify specific mental health challenges not uncommon in the older adult population
5. Develop and understand that older adult caregiver capabilities require ongoing assessment and often require adjustments to the plan of care as directed by the physical therapist
6. Identify possible environmental factors that may affect the older adult's independence and how to address and communicate these factors effectively within the healthcare team
7. Use technology appropriately, efficiently, and effectively for course assignments, and creating instructional materials for older adults
8. Develop a strong 'person first' vocabulary and holistic view of the older adult, their caregivers and families and learn the value of developing strong working relationships with the family and other support systems
9. Apply principles of person first language and patient centered language to instruct patients and educate caregivers related to older adults needs and experiences in rehabilitation
10. Effectively and safely apply industry standard balance interventions in a simulated assessment and use evidence based practice to support intervention. Provide a home exercise to an older adult with sensory deficits addressing strength or balance impairments specific to older adults
11. Demonstrate the incorporation of principles of learning when working with peers and simulation of educating others, including older adults and their family members
12. Identify and apply skills that can be utilized to support and enhance a geriatric client's participation in the physical therapy plan of care including rapport and optimizing health based on patient health condition and prior and current best practice theories
13. Select and apply effective and safe interventions with respect to complex functional and cognitive limitations specific to older adults
14. Examine and reflect on the inter-professional roles and responsibilities of the healthcare team in order to effectively support the health, wellness, and optimal movement for older adults

PTA 203 - Contemporary Topics in Physical Therapy

2 Credit(s)

This course explores contemporary issues affecting clinical and professional physical therapy practice and impacts on the PTA. Course culminates with a public class presentation of service learning projects to the PTA Advisory Committee.

Prerequisite: Admission into PTA Program, second year student.

Corequisite: PTA 200

Learning Outcomes

Upon completion of this course, the successful student will be able to:

1. Interview a non-native-English-speaking student about their experiences accessing health care in the United States.
2. Compare and contrast personal health care access experiences with an individual from a different cultural background.

3. Identify characteristic of different cultures that impact health care decision-making.
4. Research and report on contemporary issues impacting current and/or future practice of physical therapy including, but not limited to:
 - a Medicare Guidelines - MDS 3.0.
 - b Managed Care/Reimbursement Issues.
 - c Defensible Documentation.
 - d Supervision and the role of PTAs in Clinical Education.
 - e Access to health care and pro bono opportunities.
 - f Emerging treatment concepts.

5. Finalize and present service learning project to PTA Advisory Board including: history, identification of problem or need, project design, project implementation, project outcome, and future directions in electronic and poster format.
6. Rehearse presentation of service learning project with peers and integrate feedback from peers into service learning project poster presentation.
7. Discuss and identify service opportunities for the PTA student and the PTA program at Lane Community College.
8. Reflect upon personal growth through clinical education series with actions for continued improvement.

PTA 204 - PT Interventions - Neurological Dysfunctions

5 Credit(s)

This course is designed to assist PTA students in gaining a greater understanding of the various neurological challenges, including mental health, that affect clients in the PT environment.

Prerequisite/Corequisite: PTA 104 and (PTA 104L or PTA 104LR) or PTA 133 and (PTA 133L or PTA 133LR) with a grade of C or better.

Corequisite: PTA 204L

Learning Outcomes

Students who successfully complete this course will be able to:

1. Demonstrate an understanding of patient/client management including body functions, structures, common characteristics, impairments and related disabilities associated with selected conditions affecting the neuromuscular system using appropriate terminology: a) Central and peripheral neurological conditions (Amyotrophic lateral sclerosis, Cerebral vascular accident, Concussion, Guillain-Barré Syndrome, Huntington's Disease, Multiple Sclerosis, Parkinson's Disease, Post-polio Syndrome, Spinal Cord Injury, Traumatic Brain Injury, b) Cognitive impairments, c) Developmental disabilities, d) Movement impairment syndromes (dystonias, bradykinesia, athetosis, chorea)
2. Demonstrate an understanding of neuroanatomy, biopsychosocial factors, and cultural components that may affect treatment planning and outcomes for patients with neuromuscular conditions
3. Integrate motor learning and motor control principles during case simulations for individuals with neuromuscular conditions
4. Apply the International Classification of Functioning, Disability, and Health to describe impairments, activity and participation limitations throughout the lifespan for patients with neuromuscular conditions
5. Reflect on decision-making when selecting and planning interventions for impairments in balance, equilibrium and coordination in the adult and pediatric populations affected by neuromuscular health conditions
6. Discuss theoretical principles underlying treatment for patients with neuromuscular conditions: a) Neurodevelopmental treatment, b) Proprioceptive neuromuscular facilitation, c) Task-oriented treatment approaches
7. Apply understanding of scope of practice and knowledge of neuromuscular conditions when explaining decision-making during case simulations that include the following interventions in the physical therapy plan of care: a) Application of devices and equipment including orthotics, b) Assistive technology, c) Functional training and self-care, d) Balance and gait, e) Therapeutic exercises, f) Breathing exercises, g) Vestibular training, and h) Coordination training
8. Collect relevant tests and measures for patients with neuromuscular conditions that inform decision-making and progress in the physical therapy plan of care: aa) Normal and abnormal posture, b) Neuromuscular tone, c) Motor control, d) Normal and abnormal righting responses, e) Normal and abnormal reflexes, f) Righting equilibrium reactions, g) Changes in muscle tone, h) Standardized instruments, i) Positions of ease and positions of discomfort, j) Skin conditions, k) Sensation and perception, l) Typical and atypical developmental milestones (gross and fine motor)
9. Discuss the social impact experienced by people with neuromuscular conditions that affect interactions with others and affect access to appropriate support services

PTA 204L - PT Interventions - Neurological Dysfunctions Lab

2 Credit(s)

This co-requisite lab for PTA 204 allows students to practice clinical skills, tests, and measures for improving outcomes in patients/clients with neurological conditions.

Prerequisite: PTA 104, PTA 104L, PTA 133, and PTA 133L with a grade of C or better.

Corequisite: PTA 204

Learning Outcomes

Students who successfully complete this course will be able to:

1. Recognize how changes in neuromuscular function, communication and information processing affects patient education, safety, discharge planning, and advocacy
2. Screen for general health status, mental function, and treatment readiness using information obtained from the medical chart and patient/family interview
3. Plan interventions to improve motor function, aerobic capacity, and functional training in self-care at home/work/school settings in simulated adult and pediatric neuromuscular cases
4. Demonstrate competence in selecting and applying interventions based on the physical therapist plan of care in simulated neuromuscular cases:
 - 4a. Motor function (manual neuromuscular facilitation, gait, locomotion, balance)
 - 4b. Therapeutic exercise
 - 4c. Functional training in self-care for home, work, community, etc.
 - 4d. Aerobic endurance
 - 4e. Applications of devices and equipment (e.g., standing frame, wheelchairs and cushions, biophysical agents, mechanical lift, mobilization and pressure-relieving aids, bracing and positioning aids, safety equipment, etc.)
5. Measure proprioception, kinesthesia, and coordination
6. Summarize standardized procedures and documentation for common neuromuscular tests and measures in physical therapy
7. Select and simulate balance interventions based on standardized balance assessment outcomes
8. Assess how selected interventions address identified impairments functional limitations and disability in patients with neuromuscular deficits
9. Apply documentation standards for common neuromuscular tests and measures (arousal and orientation, posture, sensation, tone, righting and postural reactions, endurance, balance and coordination)
10. Detect gross motor milestones, fine motor milestones, and righting and equilibrium reactions in a simulated pediatric case
11. Analyze posture, sensation, movement patterns, arousal and attention in simulated adult and pediatric neuromuscular cases
12. Cite appropriate evidence to support treatment planning and interventions in simulated neuromuscular adult and pediatric cases and course discussions
13. Effectively educate others using teaching methods that are commensurate with the needs of the patient, caregiver or healthcare personnel in simulated neuromuscular cases
14. Self-assess value-based behaviors and volunteerism outcomes during development of service learning project
15. Discuss how personal values and frameworks for disability influence patient-provider interactions

PTA 204LR - PT Interventions - Neurological Dysfunctions Lab-Rogue

2 Credit(s)

This co-requisite lab for PTA 204 allows students to practice clinical skills, tests, and measures for improving outcomes in patients/clients with neurological conditions. Course taught at Rogue Community College.

Prerequisite: PTA 104 AND PTA 104LR AND PTA 133 AND PTA 133LR with a grade of C or better.

Corequisite: PTA 204

Learning Outcomes

Students who successfully complete this course will be able to:

1. Recognize how changes in neuromuscular function, communication and information processing affects patient education, safety, discharge planning, and advocacy
2. Screen for general health status, mental function, and treatment readiness using information obtained from the medical chart and patient/family interview
3. Plan interventions to improve motor function, aerobic capacity, and functional training in self-care at home/work/school settings in simulated adult and pediatric neuromuscular cases
4. Demonstrate competence in selecting and applying interventions based on the

physical therapist plan of care in simulated neuromuscular cases:

- 4a. Motor function (manual neuromuscular facilitation, gait, locomotion, balance)
 - 4b. Therapeutic exercise
 - 4c. Functional training in self-care for home, work, community, etc.
 - 4d. Aerobic endurance
 - 4e. Applications of devices and equipment (e.g., standing frame, wheelchairs and cushions, biophysical agents, mechanical lift, mobilization and pressure-relieving aids, bracing and positioning aids, safety equipment, etc.)
5. Measure proprioception, kinesthesia, and coordination
 6. Summarize standardized procedures and documentation for common neuromuscular tests and measures in physical therapy
 7. Select and simulate balance interventions based on standardized balance assessment outcomes
 8. Assess how selected interventions address identified impairments functional limitations and disability in patients with neuromuscular deficits
 9. Apply documentation standards for common neuromuscular tests and measures (arousal and orientation, posture, sensation, tone, righting and postural reactions, endurance, balance and coordination)
 10. Detect gross motor milestones, fine motor milestones, and righting and equilibrium reactions in a simulated pediatric case
 11. Analyze posture, sensation, movement patterns, arousal and attention in simulated adult and pediatric neuromuscular cases
 12. Cite appropriate evidence to support treatment planning and interventions in simulated neuromuscular adult and pediatric cases and course discussions
 13. Effectively educate others using teaching methods that are commensurate with the needs of the patient, caregiver or healthcare personnel in simulated neuromuscular cases
 14. Self-assess value-based behaviors and volunteerism outcomes during development of service learning project
 15. Discuss how personal values and frameworks for disability influence patient-provider interactions

PTA 205 - PT Interventions - Complex Medical Dysfunctions

4 Credit(s)

This course investigates physiological anomalies, clinical presentation and physical therapy treatment approaches for patients with complex medical conditions. Students advance clinical decision-making using case studies, treatment models, and evidence-based literature.

Prerequisite/Corequisite: PTA 104 and (PTA 104L or PTA 104LR) and PTA 133 and (PTA 133L or PTA 133LR) with a grade of C or better.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Define selected disorders that are influenced by multiple and/or complex body system dysfunction (e.g., lymphedema, limb loss, circulatory disorders/heart failure, integument disorders/burns, immunocompromised (cancer, HIV/AIDS, hepatitis), dementia/Alzheimer's, and PTSD).
2. Discuss clinical examples of selected complex medical conditions and support the discussion with relevant evidence.
3. Describe physiological causes of functional losses in selected complex medical conditions.
4. Explain causes for spreading and/or preventing selected medical disorders and diseases.
5. Describe the purpose and considerations for specialized interventions for complex medical conditions, including:
 - a. lymphedema management.
 - b. prosthetic and gait training.
 - c. therapeutic exercises.
 - d. skin care.
 - e. conditioning/reconditioning.
 - f. positioning.
 - g. infection control.
 - h. biophysical agents.
 - i. joint mobilization in the elderly.
6. Demonstrate appropriate intervention selection, data collection, and communication with the supervising PT during simulated complex medical cases.
7. Document wound measurements using accepted clinical standards.
8. Distinguish tissues and drainage commonly encountered in wound treatment.
9. Demonstrate an understanding of specialized equipment that protect patient safety and facilitate functional recovery following the onset of a complex medical case referred to physical therapy (e.g. prostheses, assistive devices and

equipment, positive and negative pressure rooms, personal alarms, specialized dressing/dressing changes.

10. Describe how to recognize and address concerns regarding signs and symptoms of substance abuse encountered during patient care.

11. Consider patient education strategies in the face of fluctuating cognition to optimize engagement and adherence within the PT plan of care.

PTA 205L - PT Interventions - Complex Medical Disfunctions Lab

2 Credit(s)

This co-requisite lab for PTA 205 allows students to practice clinical skills, tests, and measures for improving outcomes in patients/clients with complex medical/integument conditions.

Prerequisite: PTA 104L, PTA 104, PTA 133, and PTA 133L with a grade of C or better.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Demonstrate competency in managing and monitoring patient support equipment in simulated physical therapy cases with complex medical conditions
2. Demonstrate safe and appropriate clinical judgment in selecting, applying and modifying therapeutic exercises and wound/skin management interventions for patients with complex medical conditions (circulatory disorders, endocrine disorders, and oncology) receiving physical therapy services
3. Report specific ventilation, respiration, circulation, and integument responses to physical therapy interventions in patients with complex medical conditions
4. Demonstrate appropriate limb compression and manual contact to reduce impairments identified in the physical therapy plan of care that are associated with swelling disorders
5. Acknowledge how personal, pharmacological, psychological, and environmental factors influence the capacity to provide appropriate physical therapy interventions and support for complex medical solutions, including critical care and end-of-life
6. Advocate effectively in educating the patient and others in discharge and equipment needs based on the physical therapy plan of care for patients with complex medical conditions (prosthetics, assistive devices, home supports)
7. Select appropriate interventions for wound management based on wound characteristics and the physical therapy plan of care

PTA 205LR - PT Interventions - Complex Medical Disfunctions Lab-Rogue

2 Credit(s)

This co-requisite lab for PTA 205 allows students to practice clinical skills, tests, and measures for improving outcomes in patients/clients with complex medical/integument conditions. Course taught at Rogue Community College.

Prerequisite: PTA 104 AND PTA 104LR AND PTA 133 AND PTA 133LR with a grade of C or better.

Corequisite: PTA 205

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Demonstrate competency in managing and monitoring patient support equipment in simulated physical therapy cases with complex medical conditions
2. Demonstrate safe and appropriate clinical judgment in selecting, applying and modifying therapeutic exercises and wound/skin management interventions for patients with complex medical conditions (circulatory disorders, endocrine disorders, and oncology) receiving physical therapy services
3. Report specific ventilation, respiration, circulation, and integument responses to physical therapy interventions in patients with complex medical conditions
4. Demonstrate appropriate limb compression and manual contact to reduce impairments identified in the physical therapy plan of care that are associated with swelling disorders
5. Acknowledge how personal, pharmacological, psychological, and environmental factors influence capacity to provide appropriate physical therapy interventions and support for complex medical solutions, including critical care and end-of-life

6. Advocate effectively in educating the patient and others in discharge and equipment needs based on the physical therapy plan of care for patients with complex medical conditions (prosthetics, assistive devices, home supports)

7. Select appropriate interventions for wound management based on wound characteristics and the physical therapy plan of care

Physics

PH 101 - Fundamentals of Physics

4 Credit(s)

Some or all of the PH 101,2,3 sequence can be taken in any order. The 'Fundamentals of Physics' courses provide an introduction to a broad range of fundamental physics concepts. PH 101,2,3 are recommended for anyone seeking a good basic level of physics literacy. The sequence is designed for non-science majors, but also serves prospective science majors who want to gain a better conceptual grounding before taking General Physics. Emphasis is on everyday phenomena and conceptual understanding more than calculations. PH 101 focuses on the nature of science, data analysis, Newton's explanation of motion, momentum, energy, gravity, the atomic nature of matter, and properties of solids, liquids, gases, and plasmas. The class environment includes labs, demonstrations, discussion, and individual and group activities. Lab included.

Prerequisite: MTH 052 or above with grade of 'C-' or better or pass placement test.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Gain familiarity with a wide variety of physical phenomena involving mechanical motion and the means by which they are described and explained.
2. Correctly use elementary physics concepts regarding mechanical motion in some simple situations, and gain a significantly increased basic conceptual understanding of mechanical motion explained by Classical Mechanics.
3. Converse and comprehend through communication using elementary descriptions and dynamical laws of mechanical motion and elementary diagrammatic (e.g. free body diagrams) and motion graph representations.
4. Have familiarity with, the use of, and an elementary understanding of precision in measurement, drawing conclusions from experimental data about possible explanations of mechanical motion.
5. Have familiarity with the use of scientific equipment to investigate mechanical motion.
6. Formulate questions to move their thinking forward concerning the subject matter of the class.
7. Be familiar with elementary application of basic Classical Mechanics concepts, including Newton's Laws, Work and the Work-Energy Relation, Conservation of Energy, Impulse and the Impulse-Momentum Relation, Conservation of Momentum, Torque, and Angular Momentum.
8. Be aware of possible uses and impacts of this physics knowledge.
9. Be able to converse and write about the nature of science with increased sophistication and see physics as a science, rather than a body of knowledge.
10. Appreciate that the insights provided by classical mechanics are valuable and useful even though physics has developed beyond Classical Mechanics and beyond mechanical theories - of which Classical Mechanics is a premier example - which are fundamentally limited.
11. Have a greater appreciation that energy and technology have profound implications for humanity, which involve choices by society generally and scientists as well.

PH 102 - Fundamentals of Physics

4 Credit(s)

Some or all of the PH 101,2,3 sequence can be taken in any order. PH 102 focuses on the science of heat and thermodynamics, waves and sound, and electricity and magnetism. See information about the Fundamentals of Physics sequence in the PH 101 course description. The class environment includes labs, demonstrations, discussion, and individual and group activities. Lab included.

Prerequisite: MTH 052 or above with grade of 'C-' or better or pass placement test.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Gain familiarity with a wide variety of physical phenomena and the means by which they are described and explained involving: Thermodynamics; wave motion and wave phenomena; and Electricity and Magnetism.
2. Correctly use elementary physics concepts regarding the above phenomena in some simple situations, and gain a significantly increased basic conceptual understanding of these phenomena.
3. Converse and comprehend through communication using elementary descriptions and dynamical laws about Thermodynamics, wave motion and wave phenomena and Electricity and Magnetism and elementary diagrammatic representations (e.g. ray and wave crest diagrams and circuit diagrams).

4. Have familiarity with, the use of, and an elementary understanding of precision in measurement, drawing conclusions from experimental data about possible explanations of the course phenomena.
5. Have familiarity with the use of scientific equipment to investigate the course phenomena.
6. Be able to formulate questions to move their thinking forward concerning the subject matter of the class.
7. Be familiar with elementary application of basic concepts Thermodynamics, wave motion and wave phenomena, and Electricity and Magnetism.
8. Be aware of possible uses and impacts of this physics knowledge.
9. Converse and write about the nature of science with increased sophistication and see physics as a science, rather than a body of knowledge.
10. Appreciate that the insights provided by the Classical understanding of Thermodynamics, wave motion and wave phenomena, and Electricity and Magnetism are valuable and useful, while appreciating that further understandings have been and are being developed.
11. Have a greater appreciation that energy and technology have profound implications for humanity, which involve choices by society generally and scientists as well.

PH 103 - Fundamentals of Physics

4 Credit(s)

Some or all of the PH 101,2,3 sequence can be taken in any order. PH 103 focuses on the science of light and color and many aspects of modern physics, including atomic physics, quantum mechanics, nuclear physics, special and general relativity, and astrophysics. See information about the Fundamentals of Physics sequence in the PH 101 course description. The class environment includes labs, demonstrations, discussion, and individual and group activities. Lab included.

Prerequisite: MTH 052 or above with grade of 'C-' or better or pass placement test.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Gain familiarity with a wide variety of physical phenomena and the means by which they are described and explained involving: light, color, and optics; and Modern Physics (quantum physics; nuclear physics; and Special and General Relativity).
2. Correctly use elementary physics concepts regarding the above phenomena in some simple situations, and gain a significantly increased basic conceptual understanding of these phenomena.
3. Converse and comprehend through communication using elementary descriptions and dynamical laws about light, color, optics, and Modern Physics topics and elementary diagrammatic representations (e.g. interference diagrams and color model diagrams).
4. Have familiarity with, the use of, and an elementary understanding of precision in measurement, drawing conclusions from experimental data about possible explanations of the course phenomena.
5. Have familiarity with the use of scientific equipment to investigate the course phenomena.
6. Formulate questions to move their thinking forward concerning the subject matter of the class.
7. Be familiar with elementary application of basic concepts of light and color and Modern Physics.
8. Be aware of possible uses and impacts of this physics knowledge.
9. Converse and write about the nature of science with increased sophistication and see physics as a science, rather than a body of knowledge.
10. Appreciate that the insights provided by the Classical understanding of phenomena are valuable and useful, while appreciating that further understandings have been and are being developed. (Currently identified limitations of Quantum Mechanics and Relativity are discussed.)
11. Have a greater appreciation that energy and technology, including nuclear weapons and nuclear energy, have profound implications for humanity, which involve choices by society generally and scientists as well.

PH 201 - General Physics

5 Credit(s)

Algebra/trig-based General Physics sequence for science majors. Concepts include force, acceleration, work, energy and momentum of objects with mass in various kinds of motion. Emphasizes conceptual understanding, mathematical representations, problem solving, applications and science skills. Lab included.

Prerequisite: MTH 112 with grade of 'C-' or better or pass placement test.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Understand, construct and evaluate position, velocity, acceleration graphs, motion diagrams and kinematic equations.
2. Construct and evaluate velocity difference diagrams.
3. Use vectors and vector addition to represent various quantities.
4. Translate from one reference frame to another.
5. Understand and apply Newton's 1st Law.
6. Identify forces/interactions in a situation by type and objects involved.
7. Construct and evaluate free body diagrams for unfamiliar situations.
8. Construct and evaluate 2nd Law equations from a FBD.
9. Identify third law pairs.
10. Identify direction of acceleration for uniform and non-uniform circular motion (i.e. distinguish radial from tangential acceleration).
11. Construct and evaluate energy bar graphs for unfamiliar situations (includes identifying systems, identifying types of energy present and sources of positive or negative work).
12. Construct and evaluate Conservation of Energy equations from energy bar charts (or directly from a situation).
13. Construct and evaluate momentum bar graphs for unfamiliar situations (includes identifying systems, identifying impulses).
14. Construct and evaluate Conservation of Momentum equations from momentum bar charts (or directly from a situation).
15. Construct and evaluate extended free body diagrams.
16. Determine torques associated with forces and pivot point.
17. Construct and evaluate 2nd Law and Rotational 2nd Law equations from an extended FBD for a static situation.
18. Choose coordinate systems and determine components of vectors.
19. Extract information from representations.
20. Construct new representations from given ones.
21. Translate from one representation to another.
22. Evaluate consistency of representations and modify appropriately.
23. Consider different systems, coordinate systems, reference frames and methods of analysis to arrive at a solution.
24. Evaluate units in an equation.
25. Perform dimensional analysis on an unfamiliar system.
26. Identify assumptions.
27. Evaluate special cases for solving and checking problems.
28. Use solutions to make predictions.
29. Check solutions based on units, reasonable fit to the question.
30. Use multiple representations to determine solutions.
31. Use proportional reasoning to solve problems.
32. Design and conduct an observational experiment.
33. Propose hypotheses for the observations.
34. Design and conduct a testing experiment.
35. Identify the hypotheses to be tested.
36. Design a reliable experiment that tests the hypothesis.
37. Distinguish between a hypothesis and a prediction.
38. Make a reasonable prediction based on a hypothesis.
39. Identify the assumptions made in making the prediction.
40. Determine specific ways in which assumptions might affect the prediction.
41. Decide whether the prediction and the outcome agree/disagree.
42. Make a reasonable judgment about the hypothesis.
43. Revise hypotheses when necessary.
44. Design and conduct an application experiment
45. Identify the problem to be solved.
46. Design a reliable experiment that solves the problem.
47. Use available equipment to make measurements.
48. Make judgments about the results of the experiment.
49. Evaluate the results by means of an independent method.
50. Identify the shortcomings in an experimental design and suggest specific improvements.
51. Choose a productive mathematical procedure for solving the experimental problem.
52. Identify assumptions made in using the mathematical procedure.
53. Identify relevant assumptions.
54. Determine specific ways in which assumptions might affect the results
55. Propose and evaluate potential experiments.
56. Evaluate assumptions in an experimental set up.

57. Identify and estimate measurement errors in an experiment.

PH 202 - General Physics

5 Credit(s)

Algebra/trig-based General Physics sequence for science majors. Concepts include rotational motion, sound, wave phenomena and optics. Emphasizes conceptual understanding, mathematical representations, problem solving, applications and science skills. Lab included.

Prerequisite: PH 201 with grade of 'C-' or better.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Understand, distinguish and apply the concepts of angular velocity and angular acceleration.
2. Understand, construct and evaluate position, velocity, acceleration graphs.
3. Understand, construct and evaluate motion diagrams.
4. Understand, construct and evaluate kinematic equations for rotational motion.
5. Understand, relate and apply the concepts of tangential and centripetal acceleration.
6. Understand and Apply Newton's 1st Law for rotations.
7. Construct and evaluate extended free body diagrams.
8. Determine torques associated with forces and pivot point for an unfamiliar situation.
9. Construct and evaluate 2nd Law and Rotational 2nd Law equations from an extended FBD for rotations about a fixed axis.
10. Construct and evaluate angular momentum bar graphs for unfamiliar situations.
11. (includes identifying systems, identifying impulses).
12. Construct and evaluate Conservation of Angular Momentum equations from momentum bar charts (or directly from a situation).
13. Understand the microscopic source of pressure.
14. Use force diagrams to determine pressure of fluids as a function of depth.
15. Understand and apply Archimedes' Principle.
16. Understand energy bar charts as they apply to Bernoulli's Principle.
17. Understand and apply Bernoulli's Principle.
18. Understand and apply Poiseuille's Equation.
19. Apply Newton's Laws and Energy concepts to vibrational motion.
20. Relate trigonometric functions to oscillatory behavior.
21. Understand the properties of waves and how they relate to mechanical properties.
22. Understand and apply the Superposition Principle to beats and standing waves.
23. Apply standing waves to open and closed systems that display harmonics.
24. Relate trigonometric functions to wave behavior.
25. Understand and apply the ray model of light using ray diagrams.
26. Understand and apply the law of reflection.
27. Understand and identify images and their properties.
28. Understand and apply the law of refraction.
29. Understand and construct ray diagrams for curved mirrors and lenses.
30. Apply distance and magnification equations for curved mirrors and lenses in both single element and multiple element arrangements.
31. Translate between optics equations and ray diagrams.
32. Understand and apply Huygens' Principle to situations involving wave fronts.
33. Apply the principle of superposition to interference effects.
34. Identify and calculate path length difference in phenomenon displaying interference such as two slit, single slit, multi-slit and thin films.
35. Choose coordinate systems and determine components of vectors.
36. Extract information from representations.
37. Construct new representations from given ones.
38. Translate from one representation to another.
39. Evaluate consistency of representations and modify appropriately.
40. Consider different systems, coordinate systems, reference frames and methods of analysis to arrive at a solution.
41. Evaluate units in an equation.
42. Perform dimensional analysis on an unfamiliar system.
43. Identify assumptions.
44. Evaluate special cases for solving and checking problems.
45. Use solutions to make predictions.
46. Check solutions based on units, reasonable fit to the question.
47. Use multiple representations to determine solutions.
48. Use proportional reasoning to solve problems.

LABS

49. Design and conduct an observational experiment.
50. Propose hypotheses for the observations.
51. Design and conduct a testing experiment.
52. Identify the hypotheses to be tested.
53. Design a reliable experiment that tests the hypothesis.
54. Distinguish between a hypothesis and a prediction.
55. Make a reasonable prediction based on a hypothesis.
56. Identify the assumptions made in making the prediction.
57. Determine specific ways in which assumptions might affect the prediction.
58. Decide whether the prediction and the outcome agree/disagree.
59. *Make a reasonable judgment about the hypothesis.
60. *Revise hypotheses when necessary.
61. Design and conduct an application experiment.
62. Identify the problem to be solved.
63. Design a reliable experiment that solves the problem.
64. Use available equipment to make measurements.
65. Make judgments about the results of the experiment.
66. Evaluate the results by means of an independent method.
67. Identify the shortcomings in an experimental design and suggest specific improvements.
68. Choose a productive mathematical procedure for solving the experimental problem.
69. Identify assumptions made in using the mathematical procedure.
70. Identify relevant assumptions.
71. Determine specific ways in which assumptions might affect the results.
72. Propose and evaluate potential experiments.
73. Evaluate assumptions in an experimental set up.
74. Identify and estimate measurement errors in an experiment.

PH 203 - General Physics

5 Credit(s)

Algebra/trig-based General Physics sequence for science majors. Concepts include electricity, magnetism, and selected topics from modern physics. Emphasizes conceptual understanding, mathematical representations, problem solving, applications and science skills. Lab included.

Prerequisite: PH 202 with grade of 'C-' or better.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Understand charge and analyze situations in terms of how charge moves.
2. Understand and apply Coulomb's Law to situations using FBDs and Newton's 2nd Law.
3. Understand, construct and evaluate energy bar charts for situations involving static electricity.
4. Understand and apply electric fields and voltage fields to analyze situations.
5. Understand and apply the concepts of voltage, current resistance and power in electrical circuits.
6. Analyze circuits in terms of series and parallel connections.
7. Understand and apply Kirchoff's Laws.
8. Understand magnetic fields and how they are created.
9. Determine magnetic fields using Ampere's Law for special cases.
10. Understand and apply the Lorentz force law for moving charges and currents.
11. Understand and apply Faraday's Law and Lenz's Law to physical situations.
12. Understand and explain the origins of Faraday's Law.
13. Understand Einstein's postulates and the reasons for proposing them.
14. Analyze situations using Einstein's postulates.
15. Understand and apply the concepts of time dilation and length contraction.
16. Understand, construct and evaluate spacetime diagrams from different frames of reference.
17. Understand and apply Einstein's energy and momentum equations.
18. Understand and explain sources of fields from different reference frames.
19. Understand the historical origins of Quantum Mechanics.
20. Apply ideas of wave mechanics to simple situations.
21. Choose coordinate systems and determine components of vectors.
22. Extract information from representations.
23. Construct new representations from given ones.
24. Translate from one representation to another.
25. Evaluate consistency of representations and modify appropriately.
26. Consider different systems, coordinate systems, reference frames and methods of analysis to arrive at a solution.

27. Evaluate units in an equation.
28. Perform dimensional analysis on an unfamiliar system.
29. Identify assumptions.
30. Evaluate special cases for solving and checking problems.
31. Use solutions to make predictions.
32. Check solutions based on units, reasonable fit to the question.
33. Use multiple representations to determine solutions.
34. Use proportional reasoning to solve problems.
35. Design and conduct an observational experiment.
36. Propose hypotheses for the observations.
37. Design and conduct a testing experiment.
38. Identify the hypotheses to be tested.
39. Design a reliable experiment that tests the hypothesis.
40. Distinguish between a hypothesis and a prediction.
41. Make a reasonable prediction based on a hypothesis.
42. Identify the assumptions made in making the prediction.
43. Determine specific ways in which assumptions might affect the prediction.
44. Decide whether the prediction and the outcome agree/disagree.
45. *Make a reasonable judgment about the hypothesis.
46. *Revise hypotheses when necessary.
47. Design and conduct an application experiment.
48. Identify the problem to be solved.
49. Design a reliable experiment that solves the problem.
50. Use available equipment to make measurements.
51. Make judgments about the results of the experiment.
52. Evaluate the results by means of an independent method.
53. Identify the shortcomings in an experimental design and suggest specific improvements.
54. Choose a productive mathematical procedure for solving the experimental problem.
55. Identify assumptions made in using the mathematical procedure.
56. Identify relevant assumptions.
57. Determine specific ways in which assumptions might affect the results
58. Propose and evaluate potential experiments.
59. Evaluate assumptions in an experimental set up.
60. Identify and estimate measurement errors in an experiment.

PH 211 - General Physics with Calculus

5 Credit(s)

PH 211-213 is a calculus-based, three-term sequence providing an introduction to fundamental physics concepts, analysis, exploration, calculation and problem-solving that are required for engineering and physics majors, and also readily meets any General Physics requirements for other health, mathematics and science majors. PH 211,2,3 require a concurrent study of calculus in Math 251,2,3, if calculus hasn't been studied previously. Concurrent study of calculus can be expected to be supported by the experience of these physics courses. These three courses all focus on conceptual understanding and exploration, visual and mathematical representation, calculation, and problem-solving. PH 211 introduces the nature of science, Classical Newtonian Mechanics, energy, and momentum. The class environment includes labs, demonstrations, discussion, and individual and group activities. Lab included.

Corequisite: MTH 251

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Think, converse and write with significant conceptual precision about translational mechanical motion, using applicable calculus concepts and creating multiple, appropriate visual and mathematical representations of the motion
2. Make appropriate decisions, converse and write with significant conceptual precision about measurement, the use of applicable scientific equipment to conduct experimental investigation of translational motion, and the design of experiments and evaluation of results of experiments, and draw conclusions about possible explanations of translational motion from experiment and calculation
3. Formulate questions to move their thinking forward concerning the subject matter of the class and monitor and evaluate their thinking for consistency and reasonableness in the course of study and problem-solving.
4. Appropriately choose and apply the following frameworks of classical mechanics to systems exhibiting translational motion: Newton's Laws, Work and the Work-Energy Relation, Conservation of Energy, Impulse and the Impulse-Momentum Relation, and Conservation of Momentum
5. Approach problem-solving in a manner appropriate to physics and to the level

needed by beginning physics and engineering majors; they will be aware that this may be significantly different from working through exercises encountered in mathematics classes and perhaps previous science classes; and they will be aware of possible uses and impacts of this physics knowledge

6. Converse and write about the nature of science with some sophistication and approach the problem-solving in physics as aligned to physics as a science, rather than a body of knowledge
7. Appreciate that the insights provided by classical mechanics are valuable and useful even though physics has developed beyond Classical Mechanics and beyond mechanical theories - of which Classical Mechanics is a premier example - which are fundamentally limited

PH 212 - General Physics with Calculus

5 Credit(s)

This course introduces rotational motion, fluid pressure and Bernoulli's equation, oscillatory motion, and fundamentals of waves and optics. See information about the General Physics with Calculus sequence in the PH 211 course description. The class environment includes labs, demonstrations, discussion, and individual and group activities. Lab included.

Prerequisite: PH 211 and MTH 251 with grades of 'C-' or better

Corequisite: MTH 252

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Using applicable calculus concepts and creating multiple, appropriate visual and mathematical representations, think, converse and write with significant conceptual precision about rotational motion, fluid dynamics, Special Relativity, vibration and waves, sound, light and optics.
2. Make appropriate decisions, converse and write with significant conceptual precision about measurement, the use of applicable scientific equipment to conduct experimental investigation of translational motion, and the design of experiments and evaluation of results of experiments, and draw conclusions from experiment and calculation about possible explanations involving rotational motion, fluid dynamics, Special Relativity, oscillations, waves, and optics.
3. Formulate questions to move their thinking forward concerning the subject matter of the class and monitor and evaluate their thinking for consistency and reasonableness in the course of study and problem-solving.
4. Appropriately choose and apply explanations involving: classical rotational dynamics, fluid mechanics, Special Relativity, oscillations, waves, and optics.
5. Approach problem-solving in a manner appropriate to physics and to the level needed by beginning physics and engineering majors; they will be aware that this may be significantly different from working through exercises encountered in mathematics classes and perhaps previous science classes; and they will be aware of possible uses and impacts of this physics knowledge.
6. Converse and write about the nature of science with some sophistication and approach the problem-solving in physics as aligned to physics as a science, rather than a body of knowledge.
7. Appreciate that the insights provided by classical rotational dynamics, fluid mechanics, Special Relativity, and elementary explanations of oscillations, waves and optics are valuable and useful, even though physics has developed beyond some of these theories and approaches.

PH 213 - General Physics with Calculus

5 Credit(s)

PH 213 is the last term of the calculus-based General Physics sequence and focuses primarily on electricity and magnetism. See information about the General Physics with Calculus sequence in the PH 211 course description. The class environment includes labs, demonstrations, discussion, and individual and group activities. Lab included.

Prerequisite: PH 212 and MTH 252 with grade of 'C-' or better

Prerequisite/Corequisite: MTH 253 or MTH 254

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Think, converse and write with significant conceptual precision about electricity and magnetism, using applicable calculus concepts and creating multiple, appropriate visual and mathematical representations of the motion
2. Make appropriate decisions, converse and write with significant conceptual precision about measurement, the use of applicable scientific equipment to conduct experimental investigation of the electrical interaction, and the design of experiments and evaluation of results of experiments, and draw conclusions from experiment and calculation about possible explanations of electric, magnetic and electro-magnetic phenomena

3. Formulate questions to move their thinking forward concerning the subject matter of the class and monitor and evaluate their thinking for consistency and reasonableness in the course of study and problem-solving
4. Appropriately choose and apply the basic concepts and laws of Classical Electricity and Magnetism, expressed in their integral form
5. Approach problem-solving in a manner appropriate to physics and to the level needed by beginning physics and engineering majors; they will be aware that this may be significantly different from working through exercises encountered in mathematics classes and perhaps previous science classes; and they will be aware of possible uses and impacts of this physics knowledge
6. Converse and write about the nature of science with some sophistication and approach the problem-solving in physics as aligned to physics as a science, rather than a body of knowledge
7. Appreciate that the insights provided by Classical Electricity and Magnetism are valuable and useful even though physics has developed beyond Classical Electricity and Magnetism

Political Science

PS 101 - Modern World Governments

4 Credit(s)

Modern World Governments is an introductory class to the study of politics, intended to familiarize students with the history, political systems, practices, cultures, and institutions of various countries. By examining and comparing these countries the course will introduce the basic ideas, terminology, and debates in political science. The fundamental goals of the class are to expose students to the diversity of political systems in the modern world, teach students how to analyze politics in other countries, teach students to think critically, and through reflection gain a better understanding of their own political system. In an increasingly global world advancing our understanding of the politics, histories, and cultures outside our borders is crucial. This course will serve as foundation for those who want to study international relations or comparative politics.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Define and utilize the basic terminology used in comparative politics and political science more broadly
2. Identify, explain, and critically analyze the diversity of historical experiences, types of governmental arrangements, political cultures, and economic systems in the world
3. Identify the various types of legislative, executive, judicial and electoral institutional arrangements in the world, explain how they function, and analyze the political consequences of specific institutional arrangements
4. Explain how history, political culture and development experiences impacts contemporary institutional and economic arrangements
5. Develop and express political ideas and opinions through the critical evaluation of political information with respect for different points of view
6. Apply knowledge and experiences to increase appreciation for and participation in the global community
7. Critically assess one's own political system and culture and the role and actions of the United States globally

PS 201 - U.S. Government and Politics

3 Credit(s)

An introduction to U.S. Government and politics that includes consideration of the debates surrounding the formation of the Constitution, American political economy, media and politics, the formation and impact of public opinion, and various forms of political participation including voting, political parties, campaigns, interest groups, and social movements.

Learning Outcomes

After completing this course, students should be able to:

1. Identify, explain, and analyze historical foundations, core concepts, theories, debates, and historical foundations for contemporary U.S. politics and government.
2. Analyze how social and political phenomena influence human and governmental behavior.
3. Identify and explain influences on the U.S. political system, institutions, and political culture.
4. Identify, explain, and critically assess various means through which citizens and groups participate in U.S. politics.
5. Explain the roles and responsibilities of individuals and/or institutions within the context of the U.S. political system.

6. Develop and express political ideas and opinions through the critical evaluation of political information with respect for different points of view.
7. Apply knowledge and experiences to increase appreciation for and participation in the United States' diverse political society.

PS 202 - U.S. Government and Politics

3 Credit(s)

A continuation of U.S. Government and Politics that focuses on the institutions of American Government (the US Congress, the Presidency, the Federal Bureaucracy, and the Federal Court System), the history, formation, and implementation of civil rights and liberties in United States; the theory and practice of American Federalism, and the formation and implementation of U.S. economic and foreign policy.

Learning Outcomes

After completing this course, students should be able to:

1. Identify, explain, and analyze historical foundations, core concepts, theories, debates, and historical foundations for contemporary U.S. politics and government.
2. Analyze how social and political phenomena influence human and governmental behavior.
3. Identify and explain influences on the U.S. political system, institutions, and political culture.
4. Identify, explain, and critically assess various means through which citizens and groups participate in U.S. politics.
5. Explain the roles and responsibilities of individuals and/or institutions within the context of the U.S. political system.
6. Develop and express political ideas and opinions through the critical evaluation of political information with respect for different points of view.
7. Apply knowledge and experiences to increase appreciation for and participation in the United States' diverse political society.

PS 203 - State and Local Government and Politics

3 Credit(s)

This class completes the three-course sequence in U.S. Government and Politics. The course examines the place of state and local government and politics in the larger federal system. Topics will include federalism, electoral politics, institutions and actors in city, county, and state politics and government, taxation and economic development. This course will include both a comparative analysis of various states and communities as well as examples from Lane County and Oregon.

Learning Outcomes

After completing this course, students should be able to:

1. Compare and contrast the roles and responsibilities of local, state, and federal governments within the context of the U.S. federal system.
2. Analyze how social and political phenomena influence human and governmental behavior.
3. Compare and contrast historical and contemporary issues at the state and local levels.
4. Explain the roles and responsibilities of individuals and/or institutions within the context of state and local politics to provide a foundation for effective civic participation.
5. Develop and express political ideas and opinions through the critical evaluation of political information with respect for different points of view.
6. Apply knowledge and experiences to increase appreciation for and participation in the state and local political community.

PS 205 - International Relations

3 Credit(s)

This introductory course examines the system of relationships between states, including international organizations and non-governmental organizations. Global issues such as international trade, the environment, human rights, and organized violence are emphasized.

Learning Outcomes

After completing this course, students should be able to:

1. Explain, analyze, and apply the core explanatory theories of international relations and identify and apply the different levels of analysis.
2. Identify and assess the role of different actors, such as states, international organizations, and other non-state actors.
3. Compare and contrast the diversity of historical and contemporary experiences among and between states, actors, cultures, and institutions.

4. Examine the causes and consequences of conflict and cooperation in the international system.
5. Identify and appraise the processes of globalization.
6. Develop and express political ideas and opinions through the critical evaluation of political information with respect for different points of view.
7. Apply knowledge and experiences to increase appreciation for and participation in the global community.

PS 208 - Introduction to Political Theory

4 Credit(s)

This course is designed to introduce students to political theory from ancient to modern times. Readings may be assigned from ancient, Medieval, modern, and contemporary works in political theory. Issues discussed may include the formation of government, the relationship between the citizen and state, and the proper role of government.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior. A wide range of the theories of prominent political philosophers are presented in lecture format. I outline the major arguments of each theorist, examining how they understand human behavior and why they prescribe rules for behavior. We continuously analyze the applicability of theories to different social phenomenon, examining how the theories learned apply to both hypothetical situations and real social phenomenon. The idea is to get students to critically assess the utility of various theories in explaining human behavior.
2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live. Students are encouraged to bring their own knowledge and experiences to class discussions, the term paper, and to the exams. Personal growth can result from a better understanding of one's own political beliefs as they are embedded in the theories of different political theorists. The wide diversity of theorists examined provides students with a wealth of knowledge from which they can approach and appreciate our diverse social world. Lectures demonstrate the wide diversity among theorists and the small nuances between theorists of a similar stripe. Lectures also illustrate the development of political theory over time, from the ancient Greeks to contemporaries, explaining how political thought is embedded in and dependent upon historical time periods.
3. Understand the role of individuals and institutions within the context of society. The role of the individual, social groups, and political institutions is examined for most of the theorists covered. In fact, this is very project of much political theory. Some theorists focus on the role of the individual, others on groups, and a few on institutional arrangements in their ideal societies. The diversity of theorists examined presents students with the opportunity to learn about the role of individuals, groups, and institutions from differing perspectives.
4. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry. Assessment of different theories and concepts is the essence of this class. For many theorists, although not for all, we examine how they arrive at their theories, what methods of inquiry they utilize, and examine the origin of methods of inquiry.
5. Utilize appropriate information literacy skills in written and oral communication. In the term paper students are required to come up with their own problem statement, determine the nature and extent of the information needed to address the problem, assess the relevant information, and evaluate this information critically. This is a difficult task in political theory, so I offer continuous support at all stages of writing the term paper. During class discussions and in the exams I use questions to get students to formulate problem statements, from which we then gather information in the form of diverse viewpoints, and critically assess the information.
6. Understand the diversity of human experience and thought, individually and collectively. The diversity of theorists we examine in ten weeks illustrates the diversity of human thought. The course moves fast and we cover a lot.
7. Apply knowledge and skills to contemporary problems and issues. After I have lectured on a topic, and often during lectures, we apply theories learned to historical and contemporary issues and debates. Rather than simply present the ideas of theorists, through discussion and in exam questions, an emphasis is placed on the application of theoretical knowledge to real world phenomenon.

PS 211 - Peace and Conflict Studies: Global

4 Credit(s)

This course focuses on issues of peace and conflict at the global level. Based upon principles of social and economic justice, the course is designed to integrate

theory with practice. Topics include the relationship of war and militarism to peace, violence embedded in the structures of the global economic system, conflicts resulting from environmental exploitation, feminist peace paradigms, and peace at the individual level as the foundation for global peace.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior. Apply a variety of peace paradigms developed and utilized in Peace Studies, including the Negative Peace paradigm, the Structural Peace paradigm, the Environmental paradigm, the Feminist paradigm, and the Integral Peace paradigm, to actors and agents operating at or impacting human behavior at the global level.
2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live. The concepts and information provided are designed to be relevant to the everyday lives of students. This helps students understand and locate themselves in the social world of which they are a part. This understanding, in turn helps them to develop compassion and understanding for others and the environment.
3. Understand the role of individuals and institutions within the context of society. Students learn different conceptions of power, ranging from the largest institutions of government and corporations on the one hand, to personal and collective group power on the other. Students learn the difference between dominant narratives emanating from many institutions to hidden and liberating narratives that empower people to effectively act on their own behalf as individuals and as part of social movements.
4. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry. Students examine the effectiveness of the various paradigms in producing peace by applying empirical facts to global conflicts and to areas where peace flourishes. This occurs by examining specific places like the Middle East to understand the history and the underlying dynamics the politics, culture and religion of the region. This provides students tools to empirically evaluate the claims they hear from their own government and mainstream news.
5. Utilize appropriate information literacy skills in written and oral communication. Students learn the critical thinking skills of 'immanent critique' and 'deconstruction' to determine if information supports a claim and arguments are internally consistent. Students are introduced to library research techniques to locate relevant and reliable information. Students learn the difference between plagiarism and use of sources properly cited in their essay assignments. Students are taught to integrate relevant, appropriately cited information into written assignments in support of the arguments and claims they develop.
6. Understand the diversity of human experience and thought, individually and collectively. Students learn appreciation for the diversity of peoples, religions, and cultures at the global level. This helps them consider the lived experiences of non-Americans and the impacts of violence, both physical and economic, on the lives of other people and on the earth itself. Students also learn to practice conscience and self-awareness that increases their appreciation of how their behavior impacts others and the earth.
7. Apply knowledge and skills to contemporary problems and issues. Students apply peace paradigms to specific, contemporary issues of peace and conflict. This includes American foreign policy, Economic Globalization, Environmental destruction, the impact of patriarchal systems on the everyday lived experiences of women and children, the development of individual and collective conscience.

PS 225 - Political Ideology

4 Credit(s)

Political ideologies are comprehensive systems of political beliefs. This course focuses on the major ideologies of the modern era, including liberalism, conservatism, fascism, Marxism, democratic socialism, anarchism, multiculturalism, and environmentalism. It examines the basic tenets of each ideology, its historical context, and its relevance to current political and social discourse.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior. The basic premises of each of the major political ideologies are presented in lecture format. I examine the explanatory, evaluative, orientative, and programmatic functions of each ideology. Ideologies contain a conception of human nature, which helps explain behavior. Each ideology is linked to the historical context in which it emerged and its present day manifestations explored.

We examine how each ideology explains the behavior of its adherents. By examining particular social phenomenon, students learn to analyze how particular kinds of human behavior results from each of the ideologies, and how social phenomenon shape ideologies themselves. We also compare and contrast competing ideologies, analyzing how phenomenon unfold as a product of ideological disputes.

2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live. The variety of ideologies presented allows student to better appreciate the diversity of our social world. They not only see the great diversity of ideologies, but also the significant diversity within each ideology. Drawing from their own experiences, students come to understand their own ideological position better. For some students this is a great moment. Convinced they were adherents of one ideology, once they learn about that ideology they often find their ideological position far more complicated than they expected and sometimes realize they no longer believe what they once did. This process requires the application of knowledge and experience to understanding. It helps students better understand their own position within the diverse and sometimes confusing world of ideology.

3. Understand the role of individuals and institutions within the context of society. Learning about ideologies inherently helps us understand the role of individuals, social groups, and institutions in society. Learning about ideologies situates individuals, social groups, and institutions in society. Some ideologies focus on individuals, others on social groups or institutions. Thus the diversity of ideologies presented creates competing explanations for their role with society.

4. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry. The ideas and concepts embedded within each ideology are explored. We explore the historical context within which each ideology emerges. Although I do not place heavy emphasis on methods of inquiry, we do examine how different ideologies are linked to certain methods of inquiry and how they are shaped by the methods used to arrive and ideological precepts.

5. Utilize appropriate information literacy skills in written and oral communication. In the term paper students are required to come up with their own problem statement, determine the nature and extent of the information needed to address the problem, assess the relevant information, and evaluate this information critically. This is a difficult task in political theory, so I offer continuous support at all stages of writing the term paper. During class discussions and in the exams I use questions to get students to formulate problem statements, from which we then gather information in the form of diverse viewpoints, and critically assess the information.

6. Understand the diversity of human experience and thought, individually and collectively. By examining the broad scope of ideologies in historical and contemporary contexts we come to understand the diversity of human experiences. We see how the ideas driving politics emerge and change societies, sometimes in revolutionary ways and sometimes gradually in protracted political battles.

7. Apply knowledge and skills to contemporary problems and issues. As part of examining each ideology I examine its present day manifestations in institutions, political parties, social movements, and individual leaders. This involves an examination of contemporary debates, from same-sex marriage to the war on terrorism. After learning the basics of each ideology we use them to explain particular phenomenon today. We watch films and have discussions on contemporary issues debated by ideologues of different stripes.

PS 275 - Legal Processes Through Civil Rights and Liberties

4 Credit(s)

This course introduces students to basic concepts of the legal system by focusing on the civil rights and liberties of American citizens. Among the legal principles covered are how the court system is organized, the differences between civil and criminal law, and how court cases are appealed. Fundamental civil rights and liberties covered include the issues of free speech, unreasonable search and seizure, the right to counsel, the impact of the Patriot Act on these rights, the right to privacy including a woman's right to control her own body, freedom of religion, the separation of church and state, and the equal protection of the laws dealing with discrimination in America.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior. Students learn the analytical legal standards applied by the courts at both the Federal and State levels that apply to the Constitutional Right of

individuals. These are applied to issues of freedom of expression, freedom of religion, rights to privacy, rights to council, and other fundamental rights provided by the United State Constitution.

2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live. Students are introduced to the latest Supreme Court interpretations of rights and liberties that apply to citizens and residents of the United States. Since Constitutional cases often deal with people at the margins of our society on issues like gay rights, racial equality, and rights to assemble, students are introduced to the legal and philosophical reasons that require a democratic society to protect persons across the wide spectrum of American life.

3. Understand the role of individuals and institutions within the context of society. With a focus on Constitutional Rights and Liberties, this class specifically focuses on the relationship between individuals and society. Criminal law is designed to define when individual behavior transgresses the standard of conduct to protect society. Constitutional Rights and Liberties define the relationship between government and individuals in a democratic society, specifically the scope of freedom protected from government interference.

4. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry. Students learn how to apply defined legal standards to fact patterns that emerge from the real world. The skill developed involves applying legal doctrines to actual conduct to determine whether the behavior is Constitutionally protected.

5. Utilize appropriate information literacy skills in written and oral communication. Students become literate in legal vocabulary and doctrines. They learn how to apply these doctrines to analyze legal fact patterns. Students are introduced to legal research and learn how to locate both relevant case law and legal journals with relevant and reliable information. Students learn the difference between plagiarism and use of sources properly cited in their legal brief assignments. Students are taught to integrate relevant, appropriately cited information into written assignments in support of the arguments and claims they develop.

6. Understand the diversity of human experience and thought, individually and collectively. Constitutional cases deal with people at the margins of our society on issues like gay rights, racial equality, gender equality, rights to free speech, rights to assemble, and the right to vote. Students are introduced to the legal and philosophical reasons that require a democratic society to protect persons across the wide spectrum of American life.

7. Apply knowledge and skills to contemporary problems and issues. Student learn how to apply legal standards to specific issues in society ranging from free speech and assembly, to freedom to exercise religion, to the right to protest, a women's right to privacy over her own body, gay rights, racial equality, and criminal rights.

PS 297 - Environmental Politics

4 Credit(s)

This course focuses on current environmental problems, frameworks for understanding these problems, and appropriate political responses. These frameworks are used to investigate possible ways to create sustainable economic, political, and social systems.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior. Apply the analytical frameworks of Deep Ecology, GAIA Theory, Traditional Ecological Knowledge, and Eco-feminism to issues of carrying capacity, ecological foot print, economic systems, eco-system resilience, public policy, and political activism.

2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live. The concepts and information provided are designed to be relevant to the everyday lives of students. This helps students understand and locate themselves in the social world of which they are a part. This understanding, in turn helps them to develop compassion and understanding for others and the environment.

3. Understand the role of individuals and institutions within the context of society. Students learn that they are integrally interconnected to the society and environment in which they live through the study of philosophical concepts like Gaia Theory; contemporary sciences of ecology and Chaos theory; economic systems that contrast growth based paradigms with Steady State Economics; specific environmental alternatives that recognize this interdependence are studied including local currency, community supported agriculture, Permaculture, bioregionalism, Transition Towns, and relocalization.

4. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry. Students apply the basic concept of carrying capacity and the ecological frameworks of Deep Ecology, Gaia Theory, Traditional Ecological Knowledge, and Eco-feminism to real world practices and problems. This provides students with the tools to empirically and philosophically evaluate the validity and appropriateness of these practices.
5. Utilize appropriate information literacy skills in written and oral communication. Students learn the critical thinking skills of 'immanent critique' and 'deconstruction' to determine if information supports a claim and arguments are internally consistent. Students are introduced to library research techniques to locate relevant and reliable information. Students learn the difference between plagiarism and use of sources properly cited in their essay assignments. Students are taught to integrate relevant, appropriately cited information into written assignments in support of the arguments and claims they develop.
6. Understand the diversity of human experience and thought, individually and collectively. This class emphasizes the importance of both cultural and ecological diversity. Particular emphasis is placed on the impact of neo-liberal economic policies on indigenous peoples and on the populations in places where structural adjustment policies impact the ability of people to govern themselves to insure their general welfare. Particular emphasis is also placed on the practices of traditional and contemporary cultures that are ecologically sound.
7. Apply knowledge and skills to contemporary problems and issues. Students apply the basic concept of carrying capacity and the ecological frameworks of Deep Ecology, Gaia Theory, Traditional Ecological Knowledge, and Eco-feminism to real world practices and problems. Problems and practices examined include neo-liberal economics, peak oil, climate change, genetic engineering, bio-colonization, nano-technology, and the destruction of indigenous lands. Alternative practices examined include local currency, community supported agriculture, Permaculture, bioregionalism, Transition Towns, and relocalization.

Psychology

PSY 201 - General Psychology

4 Credit(s)

The topics in this course (part of a 3 course offering) include: history and perspectives of psychology; research methods in psychology; the neurobiological basis of behavior; sensation and perception; human development; and states of consciousness.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Identify how differing perspectives of psychology contribute to examining and understanding the complexities of behavior and mental processes in varying contexts and environments
2. Recognize how historical approaches to psychology shaped early development of psychology
3. Identify and evaluate how scientific research methods (including experiments and correlational research) differ from other forms of inquiry and have been applied to studying mental activity, brain processes, and behavior to provide the basis for contemporary psychology
4. Identify and apply how neurobiological processes associated with the brain, behavior, sensation and perception, and consciousness, operate at different levels of analysis to shape how we interface with each other and the real world, and to shape how we understand ourselves
5. Recognize and apply how ongoing processes and the diversity of experiences throughout life shape human development

PSY 202 - General Psychology

4 Credit(s)

The topics in this course (part of a 3 course offering) include: learning, memory, cognition, emotion, and motivation.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Recognize how conditioning processes and social learning shape behavior
2. Identify and apply effective learning and study habits based on scientific research
3. Recognize and evaluate how ongoing processes contribute to structuring and transforming memory and forgetting in life
4. Identify and evaluate how reasoning and thought processes shape judgment, decision making, problem solving, and broaden our perspectives
5. Identify and evaluate factors that relate to motivation and goals
6. Identify how biological and cultural processes guide emotional and facial

expression to contribute to meaningful communication and shape our feelings toward ourselves and others

PSY 203 - General Psychology

4 Credit(s)

The topics in this course (part of a 3 course offering) include: personality, social psychology; stress and coping; psychological disorders and their treatment.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Identify major frameworks to describe personality
2. Recognize how behavior and thinking are influenced by social cognition and social/group influences. Recognize the causes of prosocial behavior & aggression
3. Recognize a variety of stressors, how they contribute to the physiological stress response and influence physical and psychological health. To identify how stress management contributes to physical and psychological health
4. Recognize the processes and criteria involved in identifying psychological disorders. Identify how psychological disorders can be addressed through various therapeutic approaches

PSY 212 - Learning and Memory

3 Credit(s)

Lectures, demonstrations, and review of experimental research in the areas of animal and human learning. Variables that influence learning will also be considered including stimulus-response connections, discrimination, chaining, verbal association, concept formation, and problem solving. Memory, transfer of learning, forgetting, insight and observational learning will also be covered.

Prerequisite: Recommend at least one introductory psychology course before taking this course.

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Gain an understanding of the concepts of implicit learning and explicit learning
2. Examine how classical conditioning, operant conditioning, and observational learning principles can be applied and develop clinical approaches to treatment
3. Evaluate how emotion influences learning and memory
4. Evaluate research methods and techniques used to measure learning & memory

PSY 215 - Lifespan Developmental Psychology

4 Credit(s)

An introduction to psychological aspects of human development from conception through old age. Topics covered include brain, perceptual, cognitive, memory, socio-emotional, and personality development. Theoretical and methodological issues pertaining to the study of development will also be covered.

Learning Outcomes

Upon successful completion of this course, the student will:

1. Apply analytical skills to social phenomena in order to understand human behavior. Learn to distinguish scientific findings pertaining to lifespan development from anecdotal reports and common sense conclusions. Identify and consider important concepts and themes to understand psychological aspects of brain development, perceptual development, cognitive development, socio-emotional development and personality development across the lifespan. Use scientific research findings to critically evaluate real life examples, media stories and ideas based on stereotypes of lifespan development.
2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live. Analyze how lifespan development themes and concepts apply to one's own experience, goals and interests to enhance personal growth and development. Consider how communication, social interactions and appreciation for diversity can be enhanced through understanding lifespan development and its impact on everyday life.
3. Understand the role of individuals and institutions within the context of society. Consider how an individual's changing abilities attitudes and goals that occur at different life stages shape his/her social support network and role in society.
4. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry. Evaluate scientific research supporting different theoretical approaches to structuring lifespan development, including stage theories and continuity theories.
5. Utilize appropriate information literacy skills in written and oral communication. Identify reliable internet resources, peer-reviewed journals

and texts to support arguments and concepts presented about lifespan development.

PSY 239 - Introduction to Abnormal Psychology

3 Credit(s)

Introduction to Abnormal Psychology bridges the gap between mental health-related concepts touched upon in the General Psychology course and the more in-depth analysis of issues relating to emotional disturbance covered in the typical upper division class in Abnormal Psychology. Major topics to be covered will include the historical and current status of behavior disorders, introductory statistics regarding the incidence and classification of persons who are emotionally disturbed and a framework for understanding such phenomena.

Prerequisite: Recommend at least one introductory psychology course before taking this course.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior. Use critical thinking skills to identify the nature and proper treatment of various forms of mental disorders.
2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live. Develop a deeper understanding of one's own mental life and the mental lives of others. Apply the relevant concepts to life outside the classroom. Learn and appreciation and compassion for the diversity of mental experience.
3. Understand the role of individuals and institutions within the context of society. Study the effects of numerous variables on the person, including genetic and environmental factors. Teaches the various perspectives on abnormal psychology and approaches taken to studying it.
4. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry. Teaches psychological theories and research associated with stress, anxiety disorders, personality disorders, substance abuse disorders, mood disorders, the schizophrenias, organic mental disorders, childhood behavioral disorders, and the relationship of psychological factors to physical illness. Teaches the various perspectives on psychology and approaches taken to studying it.
5. Utilize appropriate information literacy skills in written and oral communication. Teach students to read the scientific literature. Teach students to understand and articulate the value of therapy, and the nature of mental illness. Teach students to understand and articulate the difference between counseling and clinical treatment and the various types of mental health workers. Teach students to evaluate which treatment option, if any, is best for them or a potential patient. Teach students to articulate the implications of laws and programs on society and the mental health population.
6. Understand the diversity of human experience and thought, individually and collectively. Teaches basic concepts of abnormal psychology, encourages students to explore their implications. Explore the ways in which humans and groups are both similar and different. Examines the ways in which humans react to genetics, the environment and its stressors.
7. Apply knowledge and skills to contemporary problems and issues. Teaches how abnormal psychology and therapy work in real life. Integrates theoretical knowledge and empirical research with practical applications in the real world.

Reading Skills

RD 087 - Preparatory Academic Reading

3 Credit(s)

Students will learn active reading strategies such as finding main idea and supporting details to improve textbook comprehension. In addition, students will develop techniques for enlarging vocabulary and creating study tools. Reading selections from actual first-year textbooks are part of the course.

Corequisite: EL 115R

Learning Outcomes

Students who successfully complete this course will be able to:

1. Locate information about words in context from bound and on-line dictionaries
2. Examine reading selections to find main idea, supporting details, transitions, and patterns of organization
3. Mark text selectively and ask questions of the text
4. Expand background knowledge through frequent outside readings and written responses
5. Analyze and evaluate his/her growth as an active reader

Regional Technical and Early College

RTEC 101 - Gateway to College and Careers

1 Credit(s)

This is a variable credit course for high-school aged students who want to improve their likelihood of success in a college environment with an emphasis on career technical education. Students will self-assess interest areas and strengths, explore career pathways, and gain skills in time management, accessing information and resources, and using appropriate modes of communication in the school setting. Additionally, students will be introduced to each of the Career Technical pathways offered at Lane and will understand not only the various options for careers, but also the varying requirements for entrance into these programs. RTEC 101 is recommended for high school seniors planning to enroll at Lane.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Students will prepare concise emails and demonstrate how to communicate with college faculty and staff
2. Students will recognize financial aid and college literacy; implementing success strategies to avoid financial aid and college warnings and appeals
3. Students will choose the appropriate campus resource to help solve any academic or personal issues
4. Students will display competency when using myLane and Moodle

RTEC 105 - Introduction to Advanced Technology

3 Credit(s)

The intent of this class is to introduce students to the Advanced Technology Division at Lane Community College. Areas of discussion will be Apprenticeship, Auto Body and Paint, Automotive Technology, Aviation Academy, Construction, Diesel Technology, Drafting, Electronics, Fabrication and Welding, Manufacturing, and Sustainability Coordinator. The course will also include basic skills exposure in areas required to be successful in many of the Advanced Technology courses such as Basic Electricity, Basic Hydraulics, Basic Pneumatics, Precision Measurement, and Mechanical Fabrication.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Students will have a complete understanding of classes offered through the Advanced Technology Division at Lane Community College
2. Students will have basic skills exposure in areas required to be successful in many of the Advanced Technology courses such as Basic Electricity, Basic Hydraulics, Basic Pneumatics, Precision Measurement, and Mechanical Fabrication

Sociology

SOC 108A - Selected Topics in Women's Studies, Women's Bodies, Women's Selves

3 Credit(s)

Throughout history, cultural views and practices regarding women's bodies have fundamentally affected women's experiences, position, and relative power in society. This class focuses on the embodied experiences of women, in what ways these experiences are socially constructed, and women's accommodation and resistance to those cultural constraints. Major areas of focus will include women's health, reproduction, sexuality, gendered violence, and body image, and will include cross-cultural information.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Understand the role of individuals and institutions within the context of society.
2. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry.
3. Utilize appropriate information literacy skills in written and oral communication.
4. Apply knowledge and skills to contemporary problems and issues.

SOC 204 - Introduction to Sociology

4 Credit(s)

Introduction to fundamental concepts in sociology, such as culture, social structure, organizations, socialization, deviance, and stratification, as well as theoretical traditions and research methodology. Development and application of the sociological imagination.

Learning Outcomes

Upon successful completion of this course, the student will:

1. Define and apply fundamental concepts in sociology.

2. Utilize the sociological imagination to recognize connections between individual experiences, social structure and processes, and social change.
3. Appreciate the value of social science research methods for understanding social realities.
4. Recognize the significance of social differentiation (diversity) and globalization in human group life.
5. Identify social forces that contribute to issues of concern in contemporary societies.

SOC 205 - Social Stratification and Social Systems

4 Credit(s)

Explores patterns of social inequality, or stratification, using sociological research and theory. Focuses on race, class, and gender inequality.

Learning Outcomes

Upon successful completion of this course, the student will:

1. Demonstrate knowledge of theories and concepts used in sociology to analyze social inequality.
2. Utilize empirical data to describe patterns of social inequality and social dynamics that contribute to those patterns.
3. Explore how categories of difference (such as race, gender, and social class) are socially constructed and maintained.
4. Consider the significance of social stratification for shaping individual life chances and perspectives.
5. Engage with contemporary debates and controversies emerging from differences of gender, race, disability, sexuality, and social class.

SOC 206 - Institutions and Social Change

4 Credit(s)

Sociological analysis of fundamental social institutions, such as family, education, the economy, and the state. Connections among institutions, and the forces and dynamics of social change.

Learning Outcomes

Upon successful completion of this course, the student will:

1. Utilize sociological theory and research to analyze major social institutions.
2. Utilize sociological theory and research to analyze forces and dynamics of social change.
3. Recognize how the structure of institutions contribute to diversity and inequality among social groups.
4. Consider the significance of social structure and social change for understanding individual experiences.
5. Understand aspects of globalization that contribute to issues of concern in contemporary societies.

SOC 207 - Women and Work

3 Credit(s)

Women perform nearly two-thirds of the world's work, receive one-tenth of the world's income, and own less than one-hundredth of the world's property. This class is an introduction to and analysis of the issues necessary to understand women's work experience and economic position, past and present. Focus areas will include the multicultural economic and labor history of women in the US, the family and women's work, welfare/workfare issues, and women's position in the global economy.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Understand how gender relates to other social categories of difference
2. Understand how individual experience is linked to and impacted by broader social contexts
3. Recognize how patterns of privilege and discrimination relate to social categories of difference and impact people's lives
4. Sharpen critical thinking skills as well as civic and political literacy
5. Understand the interrelated impact of race/ethnicity, class and gender upon women's contemporary work roles and experiences

SOC 208 - Sport and Society

4 Credit(s)

This course explores the relations between sport and society. While we use sociology to help make sense of sport, we also use sport to develop the ability to think sociologically about society. Subjects include sport and: values, socialization, deviance, social problems, social inequalities including class, race, and gender, social institutions including the economy, politics, mass media, and religion, and social change.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior. Students learn to analyze a popular social institution and cultural phenomenon, in so doing to recognize and understand the complexities of other social institutions and cultural practices
2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live. Students develop an insightful understanding of how social institutions effect who they and others are, in both positive and destructive patterns
3. Understand the role of individuals and institutions within the context of society. Students learn to analyze the complex relations between society and self, social institutions and culture
4. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry. Students learn competing theories of sport and of sociology, and sociological concepts and research methods used in the study of sport and other institutions.
5. Utilize appropriate information literacy skills in written and oral communication. Students learn to read and understand conceptually, theoretically, and historically complex materials on the course subject, and to critically assess and respond to the readings and course lectures and discussions.
6. Understand the diversity of human experience and thought, individually and collectively. Students understand the human (both individual and collective) experience of sport, in many of its manifestations, including historical, economic, social psychological, and social dimensions.
7. Apply knowledge and skills to contemporary problems and issues. Students learn how to critique the role of sport in society, to identify social problems and issues emanating from sport, and to analyze and articulate possible solutions.

SOC 210 - Marriage, Family, and Intimate Relations

4 Credit(s)

Examines family, parenting, reproduction, intimate relationships, sexuality, and family disruptions in a social context. Utilizes sociological approach to develop insights into personal experiences and inform perspectives on social policies that affect families and intimate relationships.

Learning Outcomes

Upon successful completion of this course, the student will:

1. Conceptualize family as a socially constructed institution.
2. Demonstrate an understanding of how social forces contribute to diversity in human experiences of family, intimate relationships, reproduction, and sexuality.
3. Utilize sociological analysis to identify and characterize historical changes in family, intimate relationships, reproduction, and sexuality.
4. Consider the social roots of contemporary problems in families, intimate relationships, reproduction, and sexuality; and explore strategies for addressing those problems.
5. Identify and evaluate research methods used in social science to investigate family, intimate relationships, reproduction, and sexuality.

SOC 211 - Social Deviance

3 Credit(s)

This course examines the dynamic social, economic, and cultural processes through which identities and behaviors are constructed as deviant. Topics include, but are not limited to the relationships between race, class, gender, sexuality, disability and the social construction of deviance. Utilizing sociological theories we will move away from understanding deviant behavior as a personal and individual phenomenon and rather focus on deviance as a social construction that is negotiated and contested. Emphasis will be placed on the role of the state, as well as historical, political, cultural and economic dimensions of deviance and social control.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior. Understand the origins and evolution of the concept "deviant" and "criminal" and how they operate in the United States.
2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live. Explore how the development of deviant identities and behaviors intersects with individual and collective experience.
3. Understand the role of individuals and institutions within the context of society. The course emphasizes the relationship between the individuals and social

institutions. Applying the sociological imagination, students will explore how categories of social deviance are constructed and maintained.

4. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry. The course provides an overview of the history and development of sociological thought. Emphasis is placed on sociological theory and methods.

5. Utilize appropriate information literacy skills in written and oral communication. Students will assess, synthesize, and comment on quantitative and qualitative research. Students will be asked to identify and explain foundational concepts and theories to evaluate the contribution the work makes to the field of study.

6. Understand the diversity of human experience and thought, individually and collectively. Sociology is inherently a comparative discipline that examines the human condition from individual and structural levels. Students will assess and apply theories of human behavior and conformity to deepen awareness regarding social deviance.

7. Apply knowledge and skills to contemporary problems and issues. Expand the ability to think critically about contemporary debates and controversies involving deviance, crime, human rights, justice, punishment, and social control.

SOC 213 - Race and Ethnicity

4 Credit(s)

This course explores a comparative history of racial dynamics with particular emphases on the way in which race, ethnicity, and class, inform these histories. A comparative sociological approach will be used in order to explore the process of racial information. Throughout the course we will recuperate the histories of racialized groups and expose sites of oppression, struggle, and resistance.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior. Review the history, origins, causes, and consequences of racial assignments and ascription in the United States.

2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live. Explore how the development of racial categories and how they operate in the United States and globally.

3. Understand the role of individuals and institutions within the context of society.

The course emphasizes the relationship between the individuals and social institutions. Applying the sociological imagination students will explore racial categories are socially constructed and maintained.

4. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry. The course provides an overview of the history and development of sociological theories and research to explain race and stratification. Emphasis is placed on sociological theory and methods as they inform our understanding of race and ethnicity.

5. Utilize appropriate information literacy skills in written and oral communication. Students will assess, synthesize, and comment on quantitative and qualitative research. Students will be asked to identify and explain foundational concepts and theories to evaluate the contribution the work makes to the field of study.

6. Understand the diversity of human experience and thought, individually and collectively. Sociology is inherently a comparative discipline that examines the human condition from individual and structural levels. Students will assess and apply theories or racial stratification and identification.

7. Apply knowledge and skills to contemporary problems and issues. Expand your ability to think critically about contemporary issues and controversies regarding race and ethnicity.

SOC 215 - Social Class

4 Credit(s)

Examines the centrality of social class in contemporary society. Topics include: conceptions of class, class structure, class consciousness, class inequality and social mobility, worker alienation and exploitation, ideology, the relations between class and culture, the role of money and power elites in politics, the role of transnational corporations in the world, and class-based social movements and revolutions.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior. Students learn to analyze a fundamental social phenomenon that lies at the core of much social and individual behavior.

2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live. Students learn how to use

their understanding of class to better understand their own life, and the lives of their families, friends, and community members.

3. Understand the role of individuals and institutions within the context of society. Students learn to understand how individuals are affected by class, and how class affects individuals.

4. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry. Students learn and critique competing conceptualizations and theories of class, and see applied various sociological research methods used in the study of class and related social inequalities.

5. Utilize appropriate information literacy skills in written and oral communication. Students learn to read and understand conceptually, theoretically, and historically complex materials on the course subject, and to critically assess and respond to the readings and course lectures and discussions.

6. Understand the diversity of human experience and thought, individually and collectively. Students understand the varied and contentious historical and contemporary forms of social class.

7. Apply knowledge and skills to contemporary problems and issues. Students learn how to study class structures and class struggles, and how to analyze and strategize proposed solutions.

SOC 218 - Sociology of Gender

4 Credit(s)

Sociological research and theory is used to examine how gender is socially constructed through social institutions, social interaction, and the formation of a gendered identity. Considers how gender interacts with other categories of difference (such as race and social class) to shape major social institutions and personal experiences. Explores how gender arrangements can be transformed.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior. Utilize sociological theory and research to analyze gender as an organizing principle in human group life.

2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live. Explore the social construction of gender through social institutions, interaction, ideology, and identity formation; includes the intersection of gender with other categories of difference. Students encouraged to consider the significance of gender in their own life experiences and perspectives.

3. Understand the role of individuals and institutions within the context of society. Examines significance of gender as an organizing principle in social life, including social institutions and the process of social change. Considers experiences of individuals within a social context.

4. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry. Source materials utilize multiple sociological theories and research methods to develop core concepts. The social construction of reality is a central theme. Students encouraged to examine personal experience in context of patterns identified through social research.

5. Utilize appropriate information literacy skills in written and oral communication. Core concepts build vocabulary to formulate meaningful problem statements from a sociological perspective. Course materials include qualitative and quantitative data from a variety of sources. Information is presented in oral, visual, and written formats. Opportunities for discussion and writing provided.

6. Understand the diversity of human experience and thought, individually and collectively. As an organizing principle in social life, gender contributes to diversity in human experience and thought. Course addresses the intersection of gender with other socially constructed categories of difference (such as race, social class, age and sexuality) in regard to individual experiences, collective action, and established institutions.

7. Apply knowledge and skills to contemporary problems and issues. Sociological perspectives and research are used to describe and analyze contemporary problems in social institutions related to gender difference and gender inequality. Considers the use of public policy to address problems.

SOC 228 - Introduction to Environmental Sociology

4 Credit(s)

This course explores the social causes, consequences, and potential solutions to environmental problems. Students survey diverse environmental philosophies and sociological perspectives to examine society's relation with the environment.

Learning Outcomes

Upon successful completion of this course, the student will:

1. Apply sociological perspectives to determine the root causes, consequences, and potential solutions to environmental problems.
2. Define and apply social and natural science concepts in order to critically examine socioenvironmental relations.
3. Employ critical and systems thinking to address global, regional, and local environmental issues.

Soil Science

SOIL 205 - Introduction to Soil Science

4 Credit(s)

Introduction to the chemical, physical, and biological nature of soils. Examines how soils function and develop over time in terms of landscapes, ecological habitat, nutrient cycles water cycles, and with human interventions. Project-based learning assignments provide hands-on experience with fundamental soil-science principles and the impact of human activities on soil quality and sustainability. Laboratory activities use classic soil science techniques. Lab included.

Learning Outcomes

Upon completion of this course the student will be able to:

1. Describe and evaluate the six major environmental functions of soil and implications for sustainability
2. Explain the five factors controlling soil development and describe how each of these factors has contributed to a soil that exists today
3. Summarize how a soil's properties affect its suitability for a variety of land-management uses
4. Assess and explain how chemical, physical and biological processes affect the function and health of soil
5. Perform calculations involving soil physical properties, water content and soil nutrient availability
6. Identify, compare and contrast soils in the landscape
7. Interpret soils related graphs, tables and maps
8. Present research findings in written graphic, and oral form

Spanish

SPAN 101 - Spanish, First-Year

5 Credit(s)

Spanish 101 is the first course in a three course sequence that provides the first year of college-level language classes. This sequence emphasizes the development of listening, speaking, reading, writing, and intercultural communication skills. In Spanish 101, students will learn to converse and write about a variety of common, every-day topics using the vocabulary and grammatical structures introduced in the course. Emphasis is also placed on writing, reading, listening, and learning about Hispanic cultures.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Communicate on very familiar topics by engaging in short, simple, and predictable exchanges (Interpersonal Communication - Novice low/mid)
2. Present basic information about self, friends, and close family members using words, phrases, and memorized expressions (Presentational Speaking - Novice low/mid)
3. Write lists and notes on familiar topics using learned phrases and memorized expression (Presentational Writing - Novice Mid)
4. Recognizes familiar words and phrases when supported by context (Interpretive Listening - Novice Mid)
5. Understands familiar words, phrases and sentences in short, simple, uncomplicated texts related to familiar topics in which the context (format, illustrations) supports meaning (Interpretive Reading - Novice Mid/High)
6. Identify some practices that are found in some Spanish-speaking countries. Identify some basic cultural beliefs and values; survive in an authentic cultural context (Intercultural competence - Novice)

SPAN 102 - Spanish, First-Year

5 Credit(s)

Spanish 102 is the second course in a three-course sequence that provides the first year of college-level language classes. This sequence emphasizes the development of listening, speaking, reading, writing, and intercultural communication skills. In Spanish 102 students will build on material learned in their prior study, to converse in and write about a variety of common, every-day topics using the vocabulary and grammatical structures introduced in the course. These courses (101, 102, 103, as well as the second year sequence: 201, 202, 203) are designed as a sequence, therefore they must be taken sequentially and

may not be taken concurrently.

Prerequisite: SPAN 101 with a passing grade of C- or above, or placement by instructor

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Communicate and exchange information about familiar topics using phrases and simple sentences. Participate in short, uncomplicated social interactions in everyday situations by asking and answering simple questions (Interpersonal speaking - Novice Mid)
2. Present information about self and some other very familiar topics using a variety of words, phrases, and memorized expressions (Presentational speaking - Novice Mid)
3. Write short messages and notes on familiar topics related to everyday life (Presentational writing - Novice High)
4. Understand words, phrases, and simple sentences related to everyday life. Recognize pieces of information and sometimes understand the main topic of an overheard conversation (Interpretive listening - Novice High)
5. Understand the main idea of short, simple, uncomplicated texts on familiar topics (Interpretive Reading - Novice high/intermediate low)
6. Identify some practices that are found in some Spanish-speaking countries. Identify some basic cultural beliefs and values; survive in an authentic cultural context (Intercultural competence - Novice)

SPAN 103 - Spanish, First-Year

5 Credit(s)

Spanish 103 is the third course in a three-course sequence that provides the first year of college-level language classes. This sequence emphasizes the development of listening, speaking, reading, writing, and intercultural communication skills. In Spanish 103 students will build on material learned in their prior study, to converse in and write about a variety of common, every-day topics using the vocabulary and grammatical structures introduced in the course. These courses (101, 102, 103, as well as the second year sequence: 201, 202, 203) are designed as a sequence, therefore they must be taken sequentially and may not be taken concurrently.

Prerequisite: SPAN 102 with a passing grade of C- or above, or placement by instructor

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Communicate and exchange information about familiar topics using phrases and simple sentences. Handle short social interactions in uncomplicated, everyday situations by asking and answering simple questions (Interpersonal speaking - Novice High)
2. Present information about self and some other very familiar topics using a variety of words, phrases, and memorized expressions (Presentational speaking - Novice Mid)
3. Write briefly about some familiar topics by connecting simple sentences (Presentational writing - Intermediate Low)
4. Understand the main idea in short, simple messages and presentations where context supports the message. I can understand the main idea of simple conversations that I overhear (Interpretive listening - Intermediate low)
5. Understand short, simple texts on familiar topics (Interpretive reading - Intermediate low)
6. Identify some practices that are found in some Spanish-speaking countries. Identify some basic cultural beliefs and values; survive in an authentic cultural context (Intercultural competence - Novice)

SPAN 201 - Spanish, Second-Year

4 Credit(s)

SPAN 201 is the first course of a three-term sequence (SPAN 201-SPAN 202-SPAN 203) that provides the second year of college-level language classes. SPAN 201-SPAN 202-SPAN 203 builds on Spanish language skills acquired through the beginning, first year sequence (SPAN 101-SPAN 102-SPAN 103) and expands upon them to develop student skills at an intermediate language level. This sequence emphasizes the development of listening, speaking, reading, writing, and intercultural communication skills at the intermediate level. SPAN 201-SPAN 202-SPAN 203 are designed as a sequence, therefore they must be taken sequentially and may not be taken concurrently.

Prerequisite: SPAN 103 at C- or better or Pass or placement by testing

Learning Outcomes

By the end of Spanish 201, successful students will be able to:

1. Participate in conversations and express preference on familiar topics using simple sentences and series of sentences (Interpersonal communication - Intermediate-low)
2. Make a presentation on a variety of familiar and some researched topics using connected sentences (Presentational speaking - Intermediate-low/mid)
3. Write on a wide variety of familiar topics using connected sentences (Presentational writing - Intermediate-low/mid)
4. Understand the main idea in messages and presentations on a variety of topics and follow the main idea of overheard conversations (Interpretive listening - Intermediate-mid)
5. Understand the main idea of short straight forward informational and fictional texts (Interpretive reading-Intermediate-mid)
6. With respect to the cultures of Spanish-speakers. Identify common patterns in cultural production and practices; compare familiar cultural beliefs and values; interact at a functional level in familiar cultural contexts (Intercultural knowledge and skills -Intermediate)

SPAN 202 - Spanish, Second-Year

4 Credit(s)

SPAN 202 is the second course of a three-term sequence (SPAN 201-SPAN 202-SPAN 203) that provides the second year of college-level language classes. SPAN 202 continues the development of and expands upon the five language skills practiced in SPAN 201 (see course description) through emphasis on the development of listening, speaking, reading, writing, and intercultural communication skills at the intermediate level. SPAN 201-SPAN 202-SPAN 203 are designed as a sequence, therefore they must be taken sequentially and may not be taken concurrently.

Prerequisite: SPAN 201 at C- or better or Pass or placement by testing

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Participate in conversations and state viewpoints on familiar topics using sentences and series of sentences (Interpersonal communication - Intermediate-mid)
2. Make a presentation on a variety of familiar and researched topics using connected sentences (Presentational speaking - intermediate-mid)
3. Write on a wide variety of familiar topics using connected sentences (Presentational writing - Intermediate-Mid)
4. Understand the main idea in messages and presentations on a variety of topics and follow the main idea of overheard conversations (Interpretive Listening-Intermediate-mid)
5. Understand the main idea of short straight forward informational and fictional texts (Interpretive reading- Intermediate-mid)
6. With respect to the cultures of Spanish-speakers. Identify common patterns in cultural production and practices; compare familiar cultural beliefs and values; interact at a functional level in familiar cultural contexts (Intercultural knowledge and skills, Intermediate)

SPAN 203 - Spanish, Second-Year

4 Credit(s)

SPAN 203 is the third course of a three-term sequence (SPAN 201-SPAN 202-SPAN 203) that provides the second year of college-level language classes. SPAN 203 continues the development of and expands upon the five language skills practiced through emphasis on the development of listening, speaking, reading, writing, and intercultural communication skills at the intermediate level. SPAN 201-SPAN 202-SPAN 203 are designed as a sequence, therefore they must be taken sequentially and may not be taken concurrently.

Prerequisite: SPAN 202 at C- or better or Pass or placement by testing

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Participate in conversations sometimes involving complications and asking questions about familiar topics using sentences and strings of sentences (Interpersonal communication - Intermediate-mid)
2. Give a presentation on a variety of topics including personal experiences and interests, academic topics that require some research in the target language, and can provide an opinion on a topic (Presentational speaking - Intermediate-mid)
3. Write and state viewpoints on a wide variety of familiar topics using connected sentences (Presentational writing - Intermediate-high)

4. Understand the main message in various time frames and presentations on a variety of topics and follow the main idea of overheard conversations (Interpretive listening - Intermediate-mid)
5. Understand the main idea of texts related to everyday life and personal interests or studies (Interpretive reading - Intermediate-mid)
6. With respect to the cultures of Spanish-speakers; Identify common patterns in cultural production and practices; compare familiar cultural beliefs and values; interact at a functional level in familiar cultural contexts (Intercultural knowledge and skills, Intermediate)

SPAN 218 - Spanish for Spanish-Speakers

4 Credit(s)

This course focuses on the continued development of reading, writing, and speaking skills in Spanish for students with native/near-native command of these skills, with an emphasis on comparing and contrasting features of Spanish that are of special interest to Spanish-speakers in the US. Course content will include a study of spelling (including accents), develop vocabulary, and foster the development of academic and professional registers of the language. Students will do this via a study of topics of special relevance to Spanish Speakers in the US using a wide variety of materials such as literary texts from a range of genres, news items (including images), music, podcasts, and art work.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Write personal, narrative, and persuasive essays while adhering to the norms of standard written Spanish
2. Give a formal presentation using an appropriate register
3. Describe and analyze different registers of Spanish used in the US and abroad
4. Describe and analyze a variety of texts from different genres, such as creative nonfiction, short stories, poetry, and journalism
5. Describe and analyze different forms of "Spanglish" in order to put non-standard forms into linguistic, cultural, and historical context
6. Connect their own personal and/or family stories to the cultural and historical contexts of immigration in the US

SPAN 221 - Spanish for Health Professions 1

4 Credit(s)

This course is geared toward students or individuals in the health professions who wish to increase their effectiveness in communicating with Spanish-speaking patients and their families in the clinical encounter. Course participants will study basic Spanish and terminology specific to the medical field, as well as cultural understandings of medicine and illness in the Spanish-speaking world. Working with interpreters and showing compassion through language will also be discussed.

Prerequisite: SPAN 102 or higher. Placement into SPAN 103 also accepted.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Identify and explain in Spanish the most common medical terms
2. Infer the meanings of more uncommon Spanish terms based on knowledge of roots, prefixes and suffixes
3. Use correct spelling and pronunciation of major medical terms in Spanish
4. Display increased cultural competence through heightened awareness of components and skills in linguistic and cultural competence, recognizing disparities in Health Care Delivery
5. Demonstrate an understanding of Spanish-speaking and/or Latino culture and reflect how cultural differences may affect interaction between patients and providers
6. Produce Spanish terms in sentences in the appropriate context
7. Apply Spanish language medical knowledge in simulations. Conduct basic interviews (assessments) in Spanish, such as the registration interview, health history, physical exam, and some more detailed encounters

Student Leadership Development

SLD 101 - Native Circles: It's Your Life

3 Credit(s)

Is an introduction to resources and the local Native community. With a Native perspective students learn to achieve goals, assess skills and to balance own identity with benefiting from educational or other institutions. The impact of class differences and race on personal success is examined.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Strengthen their academic skills and be able to articulate their personal learning preference.
2. Explore and conceptualize fundamental leadership skills through an Indigenous/Native American framework.
3. Connect with the local Indigenous/Native American community in order to strengthen personal identity.
4. Explore and re-frame their understanding of their personal belonging within predominantly white educational institutions.

SLD 103 - Post-Racial America: Challenges & Opportunities

4 Credit(s)

This course is designed to examine the current state of race relations and discourse on race in America in a "Post Civil Rights Era" environment. The course will examine the societal issues facing African Americans, Latinos/Latinas, Native Americans and other underrepresented minority populations.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Identify the major issues facing African Americans/ Blacks and other underrepresented minority groups. Students will learn about the underlying causes of racial disparity that contribute to social and political inequities.
 2. Analyze the issues of healthcare, public education, the criminal justice system, affordable housing, economic, environment, and technology.
 3. Demonstrate a critical interdisciplinary awareness of the policies and laws that contribute to racial disparity and division.
 4. Identify strategies, policies, and specific actions to address the issues causing racial division.
 5. Engage in classroom discussions and write essays of critical analysis of the major problems facing African Americans and other underrepresented minority groups. Students will be able to identify the impact of race and racism on the overall society.
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SLD 108 - Puertas Abiertas Éxito

2 Credit(s)

Puertas Abiertas Éxito offers opportunities for Latino students to contextualize academic performance and affinity to school systems. Topics include ethnic identity/diversity; bicultural leadership in school; demystifying college information and financial aid; and socio-historic-cultural forces embedded in education.

Learning Outcomes

Upon successful completion of this course, the student will:

1. Assess and contextualize the integrity of educational systems as sites of legitimacy and neutrality.
 2. Be capable of re-framing their stories as Latinos in the Americas.
 3. Re-center their place as individuals worthy of respect and dignity.
 4. Create transformative leadership strategies based on Latino cultural foundations and experiences.
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SLD 111 - Chicano/Latino Leadership 1: Quien Soy? Quienes

4 Credit(s)

This course will examine the diversity that resides within the Chicano, Mexicano, Latino, Hispanic and Caribbean cultural experience in the Americas. The class will provide a framework for understanding the ways in which distinctive social and cultural patterns arose, thus, bringing awareness of contemporary expression and their historical basis. We will explore root causes to explain how the attitudes and behaviors of the Latino community were shaped. We will assess the ability to survive as Raza by fashioning syncretic adaptive strategies to the changing conditions since 1492. A theory of transformation model will be a guiding theme of the class as students will be challenged to create a leadership that will create a leadership that will transform the condition of the Chicano/Latino community.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior: Use critical thinking skills to understand the effects of historical examples of inequality around race, class, and gender and its' impact on the Chicano/Latino community and within the context of the greater contemporary society.
2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live: Develop a deeper understanding of one's own culture as well as learning about the cultures of others.
3. Understand the role of individuals and institutions within the context of society: This ethnic studies course uses multiple methods, and techniques to allow

students to constantly find themselves and their stories within the context of the society in which we are exploring. By inserting themselves into the narrative, they can greater understand and critically analyze the relationship between the individual and societal institutions. In addition, this course examines the diversity that resides within the Chicano, Mexicano, Latino, Hispanic and Caribbean cultural experience in the Americas.

4. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry: Ethnic Studies is an interdisciplinary and multidisciplinary field of study. This Ethnic Studies course borrows from multiple fields, using a wide range of theoretical foundations and methods of inquiry, on which to build the student's understanding of the material covered in this course.

5. Utilize appropriate information literacy skills in written and oral communication: The webpage of Ethnic Studies appears on all course syllabi. Students are encouraged to use the webpage as a foundation to explore the complexities of the discipline. Students are also assigned class exercises that require them to explore web-based materials. Lastly, students are offered extra credit for exploring all forms of media resources for material related to this course.

6. Understand the diversity of human experience and thought, individually and collectively: This Ethnic Studies course engages in the critical analysis of why people (all people of all sub-groups within society) act the way that they do, both as individuals and within the context of social groups and institutions. Within the focus of this particular course: the Chicano/Latino population.

7. Apply knowledge and skills to contemporary problems and issues. Although the primary focus of this course is within a historical context, the course still engages in a free flowing comparison between historical and contemporary society. Context in understanding contemporary social phenomenon does not exist without a historical analysis.

SLD 112 - Chicano/Latino Leadership 2: Cultural Heroes

4 Credit(s)

This class will explore the concept of cultural heroes within the context of the Chicano/Latino experience. We will identify socio-historic processes that serve to highlight or diminish Chicano/Latino cultural heroes. Students will discuss and create strategies in which to celebrate and honor Chicano/Mexicano, Latino, Hispanic and Caribbean cultural heroes in school and community events. In addition, this class will explore the contributions and achievements of Chicano/Latinos in the Americas. We will survey the Chicano/Latino historical presence in the social, economic, political and cultural landscape of the United States and identify socio-historic processes that serve to highlight or diminish Chicano/Latino contributions and achievements. A theory of transformation model will be a guiding theme of the class as students will be challenged to create a leadership that will transform the condition of the Chicano/Latino community.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior: Use critical thinking skills to understand the effects of historical examples of inequality around race, class, and gender and its' impact on the Chicano/Latino community and within the context of the greater contemporary society.
2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live: Develop a deeper understanding of one's own culture as well as learning about the cultures of others.
3. Understand the role of individuals and institutions within the context of society: This ethnic studies course uses multiple methods, and techniques to allow students to constantly find themselves and their stories within the context of the society in which we are exploring. By inserting themselves into the narrative, they can greater understand and critically analyze the relationship between the individual and societal institutions. In addition, this course examines the diversity that resides within the Chicano, Mexicano, Latino, Hispanic and Caribbean cultural experience in the Americas.
4. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry: Ethnic Studies is an interdisciplinary and multidisciplinary field of study. This Ethnic Studies course borrows from multiple fields, using a wide range of theoretical foundations and methods of inquiry, on which to build the student's understanding of the material covered in this course.
5. Utilize appropriate information literacy skills in written and oral communication: The webpage of Ethnic Studies appears on all course syllabi. Students are

encouraged to use the webpage as a foundation to explore the complexities of the discipline. Students are also assigned class exercises that require them to explore web-based materials. Lastly, students are offered extra credit for exploring all forms of media resources for material related to this course.

6. Understand the diversity of human experience and thought, individually and collectively: This Ethnic Studies course engages in the critical analysis of why people (all people of all sub-groups within society) act the way that they do, both as individuals and within the context of social groups and institutions. Within the focus of this particular course: the Chicano/Latino population.

7. Apply knowledge and skills to contemporary problems and issues: Although the primary focus of this course is within a historical context, the course still engages in a free flowing comparison between historical and contemporary society. Context in understanding contemporary social phenomenon does not exist without a historical analysis.

SLD 113 - Chicano/Latino Leadership 3: Affirmative & Resistance

4 Credit(s)

This class will examine the impact of La Leyenda Negra (The Black Legend), Manifest Destiny and negative images assigned to Spanish/Mexican and Latino culture in the United States and Latin America. In addition, this class will provide a critical examination of Chicano/Latino cultural expressions in the public discourse with a focus on cultural/ethnic celebrations. We will explore the production of Chicano/Latino culture and cultural celebrations (e.g. Cinco de Mayo) via mainstream popular culture and culture produced by and for Chicano/Latinos. A theory of transformation model will be a guiding theme of the class as students will be challenged to create a leadership that will transform the condition of the Chicano/Latino community.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior: Use critical thinking skills to understand the effects of historical examples of inequality around race, class, and gender and its' impact on the Chicano/Latino community and within the context of the greater contemporary society.
2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live: Develop a deeper understanding of one's own culture as well as learning about the cultures of others.
3. Understand the role of individuals and institutions within the context of society: This ethnic studies course uses multiple methods, and techniques to allow students to constantly find themselves and their stories within the context of the society in which we are exploring. By inserting themselves into the narrative, they can greater understand and critically analyze the relationship between the individual and societal institutions. In addition, this course examines the diversity that resides within the Chicano, Mexicano, Latino, Hispanic and Caribbean cultural experience in the Americas.
4. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry: Ethnic Studies is an interdisciplinary and multidisciplinary field of study. This Ethnic Studies course borrows from multiple fields, using a wide range of theoretical foundations and methods of inquiry, on which to build the student's understanding of the material covered in this course.
5. Utilize appropriate information literacy skills in written and oral communication: The webpage of Ethnic Studies appears on all course syllabi. Students are encouraged to use the webpage as a foundation to explore the complexities of the discipline. Students are also assigned class exercises that require them to explore web-based materials. Lastly, students are offered extra credit for exploring all forms of media resources for material related to this course.
6. Understand the diversity of human experience and thought, individually and collectively: This Ethnic Studies course engages in the critical analysis of why people (all people of all sub-groups within society) act the way that they do, both as individuals and within the context of social groups and institutions. Within the focus of this particular course: the Chicano/Latino population.
7. Apply knowledge and skills to contemporary problems and issues: Although the primary focus of this course is within a historical context, the course still engages in a free flowing comparison between historical and contemporary society. Context in understanding contemporary social phenomenon does not exist without a historical analysis.

SLD 121 - African American Leadership: History, Philosophy, & Practice

4 Credit(s)

African American Leadership: History, Philosophy, and Practice is a course designed to examine the history, philosophy, key leadership strategies and practices of African American leaders. This course focuses on Leadership Theory; Foundations of AA Leadership and AA Leadership in Practice.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Know and be exposed to a wide-range for African American leaders from grassroots protest leaders to mainstream leaders in politics, arts, science, and business.
2. Apply the principles of African American leadership in their individual lives.
3. Understand the process of leadership development within the context of the African American experience.
4. Acquire and develop the personal vision, discipline and toolkit needed to prepare for leadership roles.

Sustainability-Focused Courses

For students interested in issues of sustainability (ecological, social, economic), the following courses have been deemed to have sustainability as a central focus.

Courses identified as sustainability-focused:

- Provide opportunities for students to learn about practices that support and improve the health of the systems that sustain life.
- Provide an interdisciplinary perspective that builds understanding of sustainable ecological, social and economic systems and, concern for environmental justice, and the competence to act on such knowledge.
- Equip and encourage students to participate actively in building socially diverse, just, and sustainable society, while cultivating connections to local, regional, and global communities.

Sustainability is an interest area and not a requirement for Lane degrees and certificates. Please work with an academic advisor to determine whether these courses meet specific degree or program requirements.

- BI 103M - General Biology: Biodiversity and Sustainability 4 Credit(s)
- CH 170 - Introduction to Environmental Chemistry 4 Credit(s)
- CST 201 - Sustainable Building Practices 3 Credit(s)
- ENG 240 - Nature Literature 4 Credit(s)
- ENSC 181 - Terrestrial Environment 4 Credit(s)
- ENSC 182 - Atmospheric Environment and Climate Change 4 Credit(s)
- ENSC 183 - Aquatic Environment 4 Credit(s)
- ENSC 265 - Environmental Science Field Methods 4 Credit(s)
- HE 255 - Global Health and Sustainability 4 Credit(s)
- IDS 280S - Co-op Ed: Sustainability Coordinator 3-12 Credit(s)
- PS 297 - Environmental Politics 4 Credit(s)
- SOIL 205 - Introduction to Soil Science 4 Credit(s)
- WATR 202 - Fostering Sustainable Practices 3 Credit(s)

Theatre Arts

TA 140 - Acting Shakespeare

4 Credit(s)

Introduction to the skills of performing Shakespearean language. Training includes script analysis, acting, voice, body, and interpersonal skills. Actors receive personal coaching on contemporary approaches to performing Shakespeare.

Prerequisite: No prior experience required, but TA 141 or equivalent suggested

Learning Outcomes

Upon successful completion of the course, students will be able to:

1. Approach Shakespearean texts without fear
2. Grasp the imagery and stories in the language
3. See how directors and actors deal with performing for modern audiences
4. Evaluate varying staged interpretations
5. Demonstrate effective reading and acting of Shakespeare

TA 141 - Acting 1

4 Credit(s)

Introduction to the fundamentals of acting and the use of acting skills for personal and professional growth. Class exercises focus on body, voice, memorization, increased self-awareness, relaxation, and giving and receiving constructive feedback. Students learn to apply principles from Stanislavski's system for actors through character and scene analysis. No prior experience necessary.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Explore and strengthen physical and vocal awareness and expression in a safe and supportive environment by preparing scenes and monologues for performance
2. Engage and strengthen empathy, small group communication, and problem-solving skills during class discussion and preparing a scene for performance
3. Learn and apply acting vocabulary and analysis through scene and monologue written work and research
4. Discern the strengths and weaknesses of the acting work of others, reflect on one's own personal and artistic growth and develop expectations for advanced Theatre Arts courses relating to performance in class discussion and final written assignment

TA 142 - Acting 2

4 Credit(s)

Students are introduced to in-depth character analysis and more advanced scene work. Performance material includes a ten-minute play and monologue written in contemporary language. Other topics include development of the actor's voice, release of tension, script analysis, and analyzing the work of other actors.

Prerequisite: TA 141**Learning Outcomes**

Upon successful completion of the course, students will be able to:

1. Basic tools of the acting craft: a. Physical realization/warm-up for performance, b. Character communication, c. Principles of stage movement and voice projection, d. Ensemble work and performance concepts
2. Actor's analytical approach: a. Script analysis, b. Character analysis, c. Social/cultural context, d. Discovering subtext
3. Communicating/characterization: a. Internalizing motivation, seeking objectives, b. Physicalizing character, c. Sense of discovery in character work, d. Discovering subtext
4. Interpreting and presenting: a. Interpretation that is personal but also expresses playwright's intent, b. Transforming stage fright, c. Working in front of an audience, d. Dealing with criticism
5. Concepts of serious and comedic acting
6. Assemble and present an effective audition

TA 143 - Acting 3

4 Credit(s)

Continuation of in-depth character analysis and scene work. Students learn to believably and compellingly act in scenes and monologues from contemporary or classic dramatic literature with heightened emotional stakes. Topics include auditioning techniques, development of the actor's voice, relaxation, script analysis, and analyzing the work of other actors.

Prerequisite: TA 142**Learning Outcomes**

Upon successful completion of the course, students will be able to:

1. Basic tools of the acting craft: a. Physical realization/warm-up for performance, b. Character communication, c. Principles of stage movement and voice projection, d. Ensemble work and performance concepts.
2. Actor's analytical approach: a. Script analysis, b. Character analysis, c. Social/cultural context, d. Discovering subtext
3. Communicating/characterization: a. Internalizing motivation, seeking objectives, b. Physicalizing character, c. Sense of discovery in character work, d. Discovering subtext
4. Interpreting and presenting: a. Interpretation that is personal but also expresses playwright's intent, b. Transforming stage fright, c. Working in front of an audience, d. Dealing with criticism
5. Concepts of serious and comedic acting
6. Assemble and present an effective audition

TA 144 - Improv

4 Credit(s)

Students learn theatre games, scene development, and other improv techniques. This course develops self-confidence, small group communication skills and problem solving skills. It is beneficial for actors and professionals of all fields. No prior experience necessary.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Explore and strengthen physical and vocal awareness and expression in a safe and supportive environment during in-class exercises and performances
2. Engage and strengthen empathy, small group communication, and problem-solving skills during class discussion and performance activities
3. Learn and apply improv vocabulary and concepts by teaching improv games to fellow students
4. Discern the strengths and weaknesses of the performance work of others, reflect on one's own personal and artistic growth and develop expectations for advanced
5. Theatre Arts courses relating to performance in a class discussion and final written assignment

TA 150 - Technical Production

3 Credit(s)

This course provides comprehensive information for students who want to learn the necessary technical functions, aspects and operations of Performing Arts productions. Besides a strong knowledge of many technical elements of productions, students become familiar with stagecraft, scenic design, lighting, sound, stage management and crew work. This course is recommended for performers, stagehands and future arts producers in Music, Dance and Theatre, who need to know the basics of stagecraft and backstage communications.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Read and create basic scenic and lighting plans
2. Communicate effectively with production staff using proper terminology
3. Have knowledge of electricity and lighting physics
4. Identify the basic construction materials employed in a theatrical shop and describe their fundamental properties
5. Demonstrate an appreciation for stage scenery, lighting, sound and operations by writing a review of a show with emphasis on the technical aspects of the production
6. Identify the basic types of lighting equipment, list their components, and describe their fundamental properties

TA 153 - Theatre Rehearsal and Performance

1-3 Credit(s)

Designed to provide practical application of classroom theory. Should be taken by participants in a theatrical production of this department scheduled for public performance.

Prerequisite: Instructor Consent**Learning Outcomes**

Upon successful completion of this course, the student should be able to:

1. Successfully perform in a public performance
2. Have the necessary discipline to sustain public performance

TA 212 - Intro to Costuming and Makeup

4 Credit(s)

Introduction to the skills of visually expressing a character through makeup and costuming. Course content includes: examination of the difference between fashion and costuming; introduction of the materials, machinery, tools and techniques of the fashion and costuming industry; application of acquired skills to the construction of a garment and costume elements; introduction and application of visual aesthetics of makeup for performance; fundamentals of makeup; character, age, corrective, beards and mustaches, and three-dimensional makeup design and application techniques.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Distinguish between the different roles and tasks of those working in the costume shop and stage makeup areas in the professional performing arts
2. Perform basic skills using costume shop and stage makeup tools and machinery
3. Execute basic, glamour, aging, scars, and prosthetic makeup techniques
4. Apply a critical awareness of fashion history and costume design and

construction techniques to the total visual concept of a production

5. Critique the work of others and revise one's own process to incorporate received critiques

6. Apply industry-standard health and safety policies for working in the costume shop and applying makeup

TA 241 - Intermediate Acting 1

4 Credit(s)

This course augments previous training by focusing on characterization using dramatic literature with heightened language such as plays by Ibsen, Chekhov, and Wilde. Other topics include development of the actor's voice, release of tension, script analysis, and analyzing the work of other actors.

Prerequisite: TA 143

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Demonstrate knowledge of the general theories of characterization
2. Possess the analytical skills necessary to create a character
3. Audition with confidence in a professional manner
4. Understand how to work under a variety of conditions
5. Have a working knowledge of several acting styles
6. Know how to bring oneself to the creation of a character

TA 242 - Intermediate Acting 2

4 Credit(s)

This course augments previous training by focusing on characterization in "non-realistic" dramatic literature such as Absurdist, Post-modern, and non-linear plays. Other topics include continued development of the actor's voice, focus and concentration, script analysis, and in-depth analysis of the work of other actors.

Prerequisite: TA 241

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Demonstrate knowledge of the general theories of characterization
2. Possess the analytical skills necessary to create a character
3. Audition with confidence in a professional manner
4. Understand how to work under a variety of conditions
5. Have a working knowledge of several acting styles
6. Know how to bring oneself to the creation of a character

TA 243 - Acting for the Camera

4 Credit(s)

Introduction to skills required to act in electronic media. Students learn the fundamentals of creating believable and compelling characters for camera. Topics include articulation, relaxation, script analysis, and providing feedback to fellow actors. Final project begins the creation of an "actor's reel" for auditions and agent submissions.

Prerequisite: TA 141

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Demonstrate knowledge of the general theories of characterization
2. Possess the analytical skills necessary to create a character
3. Audition with confidence in a professional manner
4. Understand how to work under a variety of conditions
5. Have a working knowledge of several acting styles
6. Know how to bring oneself to the creation of a character

TA 253 - Theatre Rehearsal and Performance

1-3 Credit(s)

Designed to provide practical application of classroom theory and skills. Should be taken by participants in a theatrical production of this department that is scheduled for public performance.

Prerequisite: Instructor Consent

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Successfully perform in a public performance
2. Gain the necessary discipline to sustain public performance

TA 272 - Introduction to Theatre

4 Credit(s)

Introduces students to the art and business of contemporary theatre. Topics include playwriting, theatre history, and contemporary production practices. Emphasis is placed on the value of theatre arts to society and the individual. No performing required. No materials to buy. Includes free attendance at local theatrical productions.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Express an appreciation for the ways current and historic theatre practitioners use/have used text and performance as a personal and social means of expression and activism
2. Evaluate the personal, social, and artistic strengths and weaknesses of a theatrical experience utilizing vocabulary specific to the dramatic arts
3. Identify elements of performance practices of numerous international theatrical traditions
4. Apply contemporary critical theories to dramatic literature and/or theatrical experiences
5. Create solutions for the existential problems facing contemporary Theatre practitioners

Unmanned Aircraft Systems

UAS 101 - Intro to UAS and Careers

1 Credit(s)

Introduction to the field of UAS operations, industries that utilize them, and how to become a UAS Professional

Learning Outcomes

Knowledge of UAS applications, industries, and UAS Professional sectors, and the training requirements to become a professional UAS operator/technician

UAS 121 - Multirotor Systems

3 Credit(s)

3D design, analysis, modeling, and 3D printing and prototyping of a student-designed multirotor UAV, including subsystems, camera, electrical wiring, autopilot integration, and autopilot tuning. This is the first year intro into UAV maintenance and design and serves as an autopilot awareness and training class that is built upon in later classes.

Prerequisite: Must be enrolled in Degree Program

Learning Outcomes

Students who successfully complete this course will be able to:

1. Understand UAV multirotor design, 3D printing basics, basics of FMEA analysis, basic avionics wiring and power systems, C2 links, and autopilot integration and basic tuning strategies

UAS 122 - Ground Control Radio Systems

2 Credit(s)

Students will receive an Amateur Radio Technician License from the FCC upon completion of this class, or an equivalent exam. This class serves to train basic electronics, radio systems, communication protocols, antenna theory, and practical applications of radio systems to UAV operations.

Prerequisite: Must be enrolled in Degree Program

Learning Outcomes

Students who successfully complete this course will be able to:

1. Understand the principles of radio systems, basic electronics theory, radio theory, antenna theory, and practical applications of this information to UAV operations and ground and air communications. Students will obtain an FCC Amateur Technician License or equivalent examination

UAS 123 - UAS Part 107 License Lab

1 Credit(s)

Prepares AUAS Program students to take the Part 107 Commercial Unmanned Operator License from the FAA. Covers all aspects of operations, weather, airspace, regulations, and operating limitations required for the 107 license.

Learning Outcomes

Prepares students for Part 107 license and all related knowledge areas

UAS 124A - Intro Flight Lab

1 Credit(s)

An introduction to Unmanned Aviation, flying procedures, checklists, airspace and regulations awareness, LAANC and aviation weather, and intro to basic maneuvers; field lab in person.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Safely and effectively perform preflights, aircraft inspections, all phases of flight, proper voice signals during operations, logging, and awareness of regulations and airspace, weather information sources, and LAANC authorizations

UAS 124B - Advanced Operations Flight Lab

1 Credit(s)

Advanced multirotor operations, flight maneuvers, precision control, regulations, and flying practice for video/photo, SAR, and inspections; field lab in person

Prerequisite: UAS 124A with a C or higher

Learning Outcomes

Students who successfully complete this course will be able to:

1. Perform advanced flight maneuvers, hand-flown precision patterns, simulated emergency maneuvers, regulations, precision flying skills, and communication protocols for flight operations. CRM and ADM are emphasized

UAS 124C - Fixed Wing Lab

1 Credit(s)

This class trains assembly, simulator flight training, and field training of fixed wing flight with a kit training aircraft provided to the students to keep. This is a stand-alone class and does not have any entrance requirements.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Build, assemble, and fly a fixed wing training UAV the student gets to keep for further training. Experience in flight simulator, and field training with buddy-box flight recovery. Fixed wing experience

UAS 124D - UAS Field Operations

1 Credit(s)

Field Operations Lab, where each class is a field trip to different industry partners across Lane County for real-world flight operations in actual conditions. Examples of locations include lumber mills, agricultural farms, parks, fire damage areas, fire/SAR training, houses for sale, UAS Test Range, etc. Serves to provide essential field training for students.

Prerequisite: UAS 124A and UAS 124B with a C or higher

Learning Outcomes

Industry partners and actual mission flight scenarios in real-world conditions and complex flight environments. Students gain valuable preflight planning experience, training and flying in actual conditions, and industry contacts. Field training and Field Operations are essential.

UAS 124E - Advanced Sensor Lab

1 Credit(s)

Advanced sensor lab, where students can gain hands-on training with sensors, cameras, electronic assemblies, and fly them to obtain advanced sensor data.

Prerequisite/Corequisite: UAS 231 with a C grade or higher or taken concurrently

Learning Outcomes

Hands-on training, maintenance, and operations of Advanced Sensors and related equipment.

UAS 124F - Professional Development

2 Credit(s)

Professional Development Lab, where students are given mentoring on how to develop a strong LinkedIn profile, generate a logo, provide accurate job bids, and prepare for work in the industry with a strong resumé.

Learning Outcomes

Valuable resumé building assistance, LinkedIn profile generation, and networking, as well as bidding for projects, and logo generation.

UAS 201 - UAS Ground School

5 Credit(s)

Pilot UAS training on operations, CRM, SCM, ORM, ADM, airspace, weather, maps, forecasts, aeronautical knowledge, training requirements, regulations, industry qualifications, and standardized FAA training material for UAS pilots

Learning Outcomes

FAA standardized pilot training for all fields related to UAS operations and airmen certification

UAS 210 - UAS Airframe Testing and Manufacture

5 Credit(s)

Aviation-grade airframe maintenance, manufacture, and Finite Element Analysis and stress testing and simulation of airframes and components.

Prerequisite: Must be enrolled in Degree Program and earn a grade of C or higher in UAS 121

Learning Outcomes

Conduct UAS airframe inspections, repairs, and manufacture, as well as stress tests, standardized aircraft-grade documentation, and subsystem integration

UAS 211 - UAS Autopilot Ardupilot and Piccolo

3 Credit(s)

Autopilot training and simulation, integration, software training, and basic tuning for several industry-standard autopilot systems

Prerequisite: Must be enrolled in Degree Program and earn a grade of C or higher in UAS 121

Learning Outcomes

Autopilot training with Ardupilot, Piccolo, and Veronte autopilots, MissionPlanner, Qgroundcontrol, Piccolo Command Center, and Veronte PIPE software, autopilot integration, and autopilot tuning

UAS 212 - UAS Power Systems

5 Credit(s)

Power, engine/motor installation, testing, and maintenance, battery, propulsion, SWaP optimization, and integration to aircraft standards.

Prerequisite: Must be enrolled in Degree Program and earn a grade of C or higher in UAS 121, UAS 210, and UAS 211

Learning Outcomes

Students who successfully complete this course will be able to:

1. Understand, repair, maintain, and install power systems, battery, engine, and perform tuning and SWaP (size, weight, and power) optimization to aviation standards, perform aviation documentation

UAS 213 - UAS Standards and Documentation

2 Credit(s)

Aviation standards, ISO9001:2015, AS9100, FAA maintenance and manufacture standards, inspection standards, and documentation training

Prerequisite: Must be enrolled in Degree Program and earn a grade of C or higher in UAS 121

Learning Outcomes

Students who successfully complete this course will be able to:

1. Have familiarity with FAA, ISO, and AS9100 standards related to aviation repair, maintenance, and manufacture, and utilize them to perform aviation operations and UAS maintenance

UAS 214 - UAS Avionics and Electrical Systems

4 Credit(s)

Avionics, wiring, harness development, and maintenance, system math, aviation standards for avionics, autopilot, and subsystems integration and maintenance.

Prerequisite: Must be enrolled in Degree Program and earn a grade of C or higher in UAS 212 and UAS 213

Learning Outcomes

Students who successfully complete this course will be able to:

1. Have familiarization with wiring harness testing, manufacture, aviation standards, components, and system requirements, power capacity measurements, and safety requirements, FMEA, and avionics failure risk analysis

UAS 215 - UAS Computer Aided Design/ Computer Aided Manufacture, Solidworks

4 Credit(s)

Solidworks training on FEA, Computational Fluid Dynamics, and simulations, as well as solid modeling for aerospace.

Prerequisite: Must be enrolled in Degree Program and earn a grade of C or higher in UAS 121

Learning Outcomes

Aviation-specific Solidworks training on Finite Element Analysis, computational flow and fluid dynamics (virtual wind tunnel), and aerospace solid modeling, documentation and development of design, validation processes

UAS 230 - UAS Data Acquisition and Analysis

3 Credit(s)

This course provides training in Pix4D or Agisoft, and QGIS, industry-standard GIS rendering and processing programs that allow for orthomosaic and 3D modeling/multispectral outputs from UAV images. This class is project-based and serves to train students with these software systems.

Prerequisite: Must be enrolled in Degree Program

Learning Outcomes

Students who successfully complete this course will be able to:

1. Gain familiarity and in-depth training on several industry-standard GIS processing software systems, and are eligible to sit for an optional Pix4D Basic

Certificate. Projects will be completed, which can also be used for student resumé additions.

UAS 231 - Advanced Sensor

3 Credit(s)

This class covers light and wave theory, plant health analysis from multispectral reflectivity, Remote Sensing, Advanced Multispectral, LiDAR, RADAR, and optics theory for awareness and training on UAV equipment designed to image outside of visible spectra. Advanced material; this class serves as the sister to UAS230.

Prerequisite: Must be enrolled in Degree Program

Learning Outcomes

Students who successfully complete this course will be able to:

1. Leave this class with in-depth knowledge of basic GIS theory, sensor types, how they work, first-year physics of light principles, and advanced training on various methods of advanced sensing and sensor uses and applications. This class prepares them to operate and train with advanced sensors used in the program

UAS 235 - Capstone Project

5 Credit(s)

This is the Capstone Project; it has been expanded to include physical projects as well, either in UAV design, software-generated projects as before, or even manufacturing or product invention/design. Instructor mentoring and guidance is offered, and project completion is required.

Prerequisite: Must obtain a C in all UAS124 series labs, and a C or better in UAS 121, UAS 122, UAS 230, and UAS 231

Learning Outcomes

This culminates as the final AUAS Program class, thus the large prerequisite list. Students will be responsible for directing their own project, with guidance and steering by faculty. This has been expanded to include physical design or prototyping projects, in addition to software projects. This class is designed to give the student a strong resumé addition of a large project.

Video Production

VP 151 - Video Production 1: Camera

3 Credit(s)

Introduces elementary concepts of video production including digital video camera operation, digital non-linear editing, and pre-production planning. Students are taught basic camera techniques, pre-production, and production practices through hands-on learning to develop basic field video production and editing skills. Focus is on individual creativity, as well as the importance of teamwork and deadlines. Projects are produced in the context of learning the theory and practice of pictorial continuity as it applies to multimedia productions.

Prerequisite: MUL 103 and MUL 105 and AUD 120 and FA 250

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Describe the history of electronic field production
2. Demonstrate a general knowledge of video and audio image and sound reproduction and recording theory
3. Demonstrate practical skills of electronic field production shooting and editing
4. Apply the aesthetic aspects of electronic field production to shooting and editing

VP 152 - Video Production 2: Editing

3 Credit(s)

Advanced concepts and skills in digital video production and non-linear editing. The theory and practice of digital non-linear editing is emphasized. Students receive hands-on opportunities to learn advanced camera techniques, pre-production, and production practices, combined with individual creativity and the importance of teamwork and deadlines. Projects are produced in the context of learning the theory and practice of video production and computerized video editing combined with the application of multimedia programs.

Prerequisite: VP 151

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Define terminology relating to computer video editing
2. Define and describe the theory of SMPTE time code editing systems
3. Maintain video and audio signal quality control in the computer edit system
4. Prepare edit decision lists for computer video editing
5. Manage edit decision lists to industry standard, either in the computer editor or in an external personal computer

6. Mix A/B video and audio signals, both concurrently and in split edits, through the computer edit system

7. Program machine operation parameters into the computer edit system

8. Follow producer's instructions in operating computer edit system

9. Operate the computer edit system to enter and store edit decisions, and operate record/play videotape recorders to perform edits

10. Edit using pre-programmed SMPTE time code edit decision list or using "park & perform" edit technique

11. Perform automatic on-line assembly edits using the computer edit system

12. Discuss in general the importance of pace and timing in computer video editing

Water Conservation

WATR 101 - Introduction to Water Resources

3 Credit(s)

This course provides a sociological perspective of topics including history and perception; water use; basic hydrology, water stressors at multiple scales; stormwater, wastewater and drinking water; water quality appropriate to use; water supply and demand management as well as emerging issues.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Demonstrate a basic understanding of water resource science, policy, and practice
2. Articulate current trends in the availability of water, water quality, and strategies for managing water resources
3. Identify the interplay between water & energy and understand basic calculations to determine the water and energy requirements for related technologies
4. Demonstrate knowledge of the role water plays in urban and environmental sustainability, and associated employment opportunities
5. Work collaboratively with a diverse population using active listening, dialog and other tools

WATR 102 - Water Careers Exploration

4 Credit(s)

The course provides an introduction to water conservation and watershed science technician fields, examining personal and global water issues. The class will define water as a critical concern of society at all levels. Students will investigate water employment opportunities through various sources.

WATR 105 - Water Conservation: Residential

4 Credit(s)

This course focuses on residential water conservation and efficiency strategies.

The course covers program development, water use, waste water, auditing, efficiency measures, alternative sources, and incentives as well as fixtures and appliances. Students participate in hands-on activities.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Describe residential indoor water use patterns (end uses) & related conservation measures
2. Perform analyses (using water bills, consumption records, surveys, and/or other tools) to identify water savings potential for individual end uses, residential premises, or selected populations
3. Identify recommended strategies to increase water efficiency in the residential sector
4. Evaluate water efficiency measures using benefit/cost analysis or other tools
5. Perform basic public outreach or marketing functions
6. Use water industry measurement units and formulas & Create technical reports
7. Understand the regulations and appropriate applications of alternative use

WATR 110 - Codes and Policies of Water

3 Credit(s)

This course will explore the broad range of codes and policies that govern water conservation and reuse systems. State codes and local policies and ordinances can either support or restrict water conservation and on-site reuse efforts. Understanding the applicability of codes and how to interpret them is an important skill for people working in the water conservation sector. Students will apply theoretical work by real-world use of learning.

Prerequisite: WATR 105 or instructor consent.

Learning Outcomes

Upon successful completion of this course, students will be able to:

1. Define and use appropriate vocabulary specific to codes and ordinances.

- Identify national (model) codes, state codes and local ordinances; their history, creations, adoptions, goals and outcomes.
- Identify other policies and standards that affect water conservation and reuse projects.
- Perform a plan check review of a water reuse project application. (greywater or rainwater system)
- Perform a plan check review of a water reuse project application. (greywater or rainwater system)
- Understand and create ordinance language for a water conservation goal.
- Perform a plan check review of a landscape project using MWELO. (Model Water Efficient Landscape Ordinance).

WATR 150 - Water Resource Economics

4 Credit(s)

Applies economic and financial fundamentals to water issues such as, efficient allocation; utility rate structures; benefit-cost analysis; water pricing; supply and demand; policy relationships; and scarcity links to pricing. This is an introduction to performing analysis of water projects.

Prerequisite: MTH 095 or MTH 098

Learning Outcomes

Upon successful completion of this course the student will:

- Select an appropriate analysis tool given a water conservation scenario provided; economic perspective, costs, benefits, and time frame for analysis
- Generate a basic financial analysis of the following types; simple payback, discounted payback, net present worth, benefit-cost including life-cycle cost
- Contrast orthodox economic analysis with alternative methods in water projects
- Critique institutional and policy effects on effective water pricing using standard economic terminology
- Identify financial analysis issues that require additional assistance including; taxation, capital depreciation, lease – purchase decisions, where they occur in conservation scenarios
- Identify and quantify basic costs and benefits for an economic analysis of a water conservation measure
- Present the results of an economic analysis in a technical report and an oral presentation

WATR 154 - Alternative Water Sources

3 Credit(s)

The Alternative water sources course focuses on the use of rainwater, stormwater, greywater, blackwater, mechanical water, and recycled water for residential, commercial, and industrial applications. These waters can be reused on-site, typically for non-potable uses with appropriate health and safety precautions as well as technical requirements. As water suppliers seek to diversify their water portfolios there is an increased interest and demand for alternative supplies. Theoretical work will be enhanced by hands-on learning.

Prerequisite: WATR 101 or instructor consent

Learning Outcomes

Upon successful completion of this course, students will be able to:

- Define and use appropriate vocabulary specific to alternative water sources.
- Identify alternative water systems, their purposes, and typical applications.
- Perform basic water audits for alternative sources.
- Calculate water and cost savings from alternative water systems.
- Prepare a proposal for a client.
- Use critical thinking skills to perform a site analysis and make recommendations for most appropriate alternative water systems.

WATR 202 - Fostering Sustainable Practices

3 Credit(s)

Study communication and collaboration skills that develop effective community sustainability programs. Learn techniques to overcome sustainable behavior barriers. Practice community initiatives through direct people contact, and learn how green industry practitioners encourage sustainable practices.

Learning Outcomes

Students who successfully complete this course will be able to:

- Develop and present results of collaborative work
- Perform public outreach and marketing tasks
- Identify and explain several definitions of sustainability
- Define appreciative inquiry
- List, discuss and implement at least one approach to community-based social marketing

- Articulate quantitative value of sustainability practices as related to business ("making the business case for sustainability")
- Demonstrate familiarity with systems theory and practices
- List a few barriers that stifle sustainable behavior (i.e. perception of ample water)
- List a few ways to overcome barriers that stifle sustainable behavior (i.e. provide facts proving lack of water and thus the need to conserve)
- Create a sample community program that fosters sustainable behavior

WATR 210 - Water Conservation: Industrial / Commercial

3 Credit(s)

Course focuses on retrofitting to increase wise water use. Emphasis of the class will be water use, waste, efficiency and auditing for Commercial, Industrial and Institutional (CII) sites. Topics include metering, sanitation, process water use, and heating and cooling systems. Concept of Industrial Ecology introduced.

Learning Outcomes

Students who successfully complete this course will be able to:

- Evaluate indoor water use patterns for commercial, industrial, and institutional (CII) sites
- Conduct water audits in the field, including end use metering using a variety of equipment
- Recommend water-efficiency measures, including various equipment options
- Calculate water, sewer, and other savings for water conservation measures
- Collect, interpret, display and present data supporting recommendations
- Work collaboratively with a diverse population

WATR 215 - Integrated Water Management

4 Credit(s)

This class examines a wide range of water uses and water issues in multiple settings and at various scales using global, regional and local case studies. Emphasis will be on the interaction between various resource uses and the effects of conservation measures.

Prerequisite: WATR 101

Learning Outcomes

Students who successfully complete this course will be able to:

- Evaluate water use patterns for rural, urban, residential and commercial sites
- Recommend water efficiency measures as well as alternate water sources, as appropriate
- Design, implement, maintain and market water conservation programs
 - Calculate water and cost savings from programs at multiple scales (including cost/benefit analysis)
- Perform public outreach and marketing functions to a broad audience utilizing multiple communication methods (technology, personal) and collaborative techniques while working with stakeholders
- Create Technical reports; collect, interpret, display and explain data; use water industry measurement units and formulas

WATR 220 - Water Conservation: Program Development

4 Credit(s)

This capstone class explores the design, implementation, maintenance and evaluation of water efficiency plans and programs. Emphasis is on creating formal water conservation plans. Students learn how to make the business case for efficiency and how wise water use supports sustainability.

Learning Outcomes

Students who successfully complete this course will be able to:

- List the main elements of a water conservation program development process
- Describe water conservation program development best management practices
- Identify and explain several definitions of sustainability and how it relates to water conservation program development
- Compare and contrast various combinations of water conservation measures to balance programs with stakeholders' (i.e. utility, end user) goals
- Perform public outreach (internally and externally) and marketing functions to identify optimum water conservation program mix
- List several ways wise water use supports sustainability
- Document and describe the effects of water conservation programs on water resources management planning and vice versa
- Document and explain water supply gains from water conservation programs
- Research, report and analyze water use in rural and urban settings from the residential through the commercial level
- Discuss the interaction between water and energy conservation programs in quantitative and qualitative terms

11. Create technical reports and presentations using a variety of communication media
12. Recommend appropriate combinations of water conservation measures and incentives to achieve stakeholder goals
13. List and describe the importance of major industry agencies and resources such as the Alliance for Water Efficiency and the California Urban Water Conservation Council
14. Quantify financial return per investment dollars spent on water conservation and efficiency
15. Evaluate the quantitative and qualitative effectiveness of water conservation programs over time

WATR 221 - Water Mechanical Systems

4 Credit(s)

Course provides an overview of mechanical systems that use or re-circulate water in residential, commercial and industrial settings. Topics include: efficient use of water and energy, appropriate technology theories and practices, rules and regulations, systems analysis techniques and emerging technologies.

Prerequisite: WATR 210

Learning Outcomes

Students who successfully complete this course will be able to:

1. Identify and understand the function of water mechanical equipment commonly found at commercial, industrial, and institutional sites and how these may be related to water conservation measures
2. Conduct end use water metering using a variety of equipment
3. Recommend water-efficiency measures, including various equipment options
4. Collect, interpret, display and present data supporting recommendations
5. Work collaboratively with a diverse population

WATR 222 - Stormwater Best Management Practices

4 Credit(s)

Students gain a working knowledge of best management practices for stormwater management with a focus on Low Impact Development strategies from constructed wetlands to swales to green roofs. Topics will include site analysis, flow management, and phyto-remediation. Labs include field trips, field work and guest lecturers.

WATR 261 - Regional Water Policy

3 Credit(s)

Explores policy, regulation, rights and law pertaining to the Pacific Northwest bioregion. Additional topics include national and international code trends, case studies illustrating conflict management techniques and the role of economic incentives in encouraging efficient resource use.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Articulate major trends and exhibit familiarity with western water law and regulation pertaining to water management and water use efficiency
2. Identify, analyze and provide solutions that meet the challenges and issues influencing water supply, water demand, & water policy governance, and that optimize the role of public & private infrastructure
3. Compare & Contrast water policy in western states, current conflicts, trends in code & regulation, and programmatic approaches to water management
4. Demonstrate knowledge of water policy framework, the agencies involved and the goals of water managers, major trends in regulation development, including user input and public participation processes

Watershed Science Technician

WST 230 - Watersheds and Hydrology

4 Credit(s)

Physical hydrology of watersheds including the water cycle, water budgets, water yields and peak flows. Effects of surface erosion, stream temperatures, nutrient levels and human activities upon watershed health. Lab included.

Prerequisite: ENSC 181 or ENSC 183 with grade of C- or better.

Learning Outcomes

Upon completion the student will be able to:

1. Demonstrate use of concepts and principles of ecological processes and their interdisciplinary connections that influence the practice of watershed science.
2. Explain in detail the components of the hydrologic cycle, including the roles that precipitation, evapotranspiration, runoff, groundwater, infiltration, and percolation play.

3. Apply standard water management approaches to several distinct watershed types, to illustrate assessment and monitoring best practices.
4. Compare, and classify stream geomorphology, sediment and channel processes, flow process, flooding, watershed ecology, and other watershed processes.
5. Explain and evaluate responses of streams in case studies to natural and human-caused disturbances, including short-term and longer term climate change.
6. Evaluate effects of common land-use practices on watershed ecosystems, stream corridors, and ecosystem services provided by the watershed.
7. Compose draft scope of work statements or management plans while working on group projects.
8. Demonstrate effective teamwork, use appropriate library and information resources, and give technical briefings; simulate public talks.

Wildland Fire Management

FIRE 100 - Introduction to Wildland Fire

4 Credit(s)

This course will explore the socio-cultural, political, economic, and ecological aspects of forest fires. Fire's relationship to the development of human cultures and civilizations will be reviewed as well as the more recent history of fire management policies in the U.S. Basics of fire science, fire ecology, and fire management will be covered particularly as it relates to the impacts of fire suppression on northwest forests. Course concepts will be solutions focused on societal change to mitigate wildfire disasters.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Define and discuss basic terminology and concepts related to wildland fire behavior: fire ecology, fire prevention, fire cessation and suppression, fire use, and fuels management
2. Define and diagram the fire combustion and fire environment triangles
3. Describe common measurements and classification systems used for fire and fuel
4. Evaluate the history and evolution of fire policies in the U.S.
5. Identify current and future fire management issues and challenges
6. Examine the role of fire in the biophysical and cultural human evolution including the development of horticulturalism, agriculturalism, and industrialism
7. Evaluate the legacy and future potential of Indigenous cultural burning and describe socioecological approaches to fire management

FIRE 110 - Wildland Fire Management Seminar

1 Credit(s)

This seminar course will help students frame the concepts in their classes and bring context within the field of wildland fire management. Weekly meetings will include guest speaker, professional development opportunities, student presentations, and how to apply for various fire-related careers in our region.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Synthesize information from other wildland fire management courses into a relevant professional presentation to peers
2. Discuss the various occupational fields associated with and adjacent to wildland fire
3. Identify the methods and strategies to apply for work in various public and private agencies
4. Discuss the intersections between society and ecological fire management
5. Relate fire management concepts to human relations and organizational skills required for fire careers including written, oral, and interpersonal communication

FIRE 120 - NWCG Basic Firefighter Lecture Series

4 Credit(s)

Students enrolled in this course will take part in facilitated National Wildfire Coordinating Group trainings for the following courses: S130, S190, L180, ICS100, IS170

Learning Outcomes

Students who successfully complete this course will be able to provide evidence of completion of classroom components of:

NWCG S-130 course
 NWCG S-190 course
 NWCG L-180 course
 NWCG IS-700 course
 NWCG ICS-100 course

FIRE 130 - NWCG Basic Firefighter Field Day

1 Credit(s)

The intent of this course is to train new firefighters in basic Firefighting skills. This includes a required field exercise that may be arduous in nature. This firefighter field review course will satisfy requirements for the National Wildfire Coordinating Group course S-130. This will be completed in the context of a two-day field activity.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Satisfy the field-based exercise requirements for NWCG course S130 including the practical application of wildland firefighting skills involved in:
 - a. Standard Firefighting Orders and Watch Out Situations
 - b. Lookouts, Communications, Escape Routes, and Safety Zones (LCES) system is and how it relates to the Standard Firefighting Orders
 - c. Various communication methods and tools used for collecting, producing, and distributing information
 - d. Standards, tools and equipment, and various methods used in fireline construction
 - e. Methods for extinguishing a fire with or without the use of water
 - f. Constructing a fireline to required standards using various methods, tools and equipment, and techniques

FIRE 200 - Wildland Fuels Management and Prescribed Burning

4 Credit(s)

Students will learn about the use of controlled burning for maintaining and restoring fire-adapted ecosystems. An introduction to the methods for measuring, classifying, and managing wildland fuels.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Describe the role of controlled burning/prescribed fire in maintaining and restoring fire-adapted ecosystems and habitats for fire-dependent species
2. Describe different firing techniques.
3. Gather data on needed social and environmental factors for planning prescribed fires
4. Participate in hands-on field exercises in planning, preparing, or implementing a prescribed fire
5. Demonstrate the use of basic tools and methods for measuring, inventorying, and classifying fuels with quantitative and qualitative analysis
6. Compare and contrast the effects of biological, chemical, mechanical, and prescribed fire fuels treatments
7. Evaluate the economic and ecological tradeoffs in context with the social controversies associated with each fuels management method

Women's Studies

WS 101 - Introduction to Women's Studies

4 Credit(s)

Introductory course to the interdisciplinary field of Women's Studies, to feminism, and to the issues raised by a focus on the lives of women. Special attention will be given to the areas of work, family, sexuality, body image, gender socialization, violence against women, social and economic relations, and theories about women's oppression, authority, and power. Class discussion is central in relating readings and lectures to students' everyday lives. Participation in a weekly discussion group is required.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Apply analytical skills to social phenomena in order to understand human behavior. Understand how gender relates to other social categories of difference. Understand how individual experience is linked to and impacted by broader social contexts.
2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live. Recognize how patterns of privilege and discrimination relate to social categories of difference and impact people's lives. Sharpen critical thinking skills as well as civic and political literacy.
3. Understand the role of individuals and institutions within the context of society. Through utilization of appropriate sociological source material (texts, media, online resources). Through a variety of assignment, group exercises, media resources, projects which require linking sociological thinking and concepts to concrete experiences and histories.
4. Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry. Intro. text chapters on theory and theorizing; conceptual frameworks; comparative methodologies in social science

research; small group projects utilizing content analysis, media literacy and research, etc. Utilization of in-class small group exercise requiring the generation and evaluation of alternate theories relative to various social problems and issues.

5. Utilize appropriate information literacy skills in written and oral communication. Class exercises and assignments requiring content analysis and ability to "deconstruct" media content, popular entertainment, etc.
6. Understand the diversity of human experience and thought, individually and collectively. Through use of an introduction to Women's Studies text written by two sociologists who employ a multicultural and cross-cultural framework.
7. Apply knowledge and skills to contemporary problems and issues. Introductory text emphasizes social action as part of knowledge acquisition.

Writing

WR 087 - English Grammar and Paragraph Writing

3 Credit(s)

This course integrates English grammar, paragraph writing, and readings. Students will develop their ability to write standard English sentences that demonstrate a mastery of grammatical concepts while learning about and using the writing process. Students will also demonstrate control and understanding of the writing process: generate and organize ideas, write drafts, revise and edit paragraphs. In addition, students will practice paragraph structures, development of ideas in a paragraph, and sentence editing and revision. Course activities may be enhanced through conferences, workshops, and/or online modules.

Corequisite: EL 116

Learning Outcomes

Upon successful completion of this course, the student will:

1. Identify parts of speech in sentences and write sentences using parts of speech appropriately
2. Identify, analyze, and write simple, compound, and complex sentences, including correct punctuation
3. Identify, analyze, and correct errors in run-ons, comma splices, and sentence fragments

WR 093 - College Writing for ELL Students

3 Credit(s)

This course develops English language learners' advanced competence in essay writing and prepares students for WR115. Students will demonstrate control and understanding of the writing process: generate and organize ideas, write drafts, revise, and edit paragraphs and multi-paragraph essays. Students will learn to recognize and correct grammatical errors in their writing. Students will also learn advanced grammatical concepts and produce essays that reflect that knowledge. Students will also use critical reading skills to analyze essays and improve their own writing. Students will submit papers using word processing software.

Corequisite: EL 113

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Within a workshop setting, demonstrate use of appropriate transitions between sentences and between paragraphs
2. Within a workshop setting, demonstrate constructive critique and revision of his/her own work and the work of others
3. Within a workshop setting, demonstrate sentence combination techniques to achieve stylistic variety
4. Within a workshop setting, recognize and correct common errors in sentence structure, punctuation, and grammar
5. Within a workshop setting, demonstrate correct use of participles, gerunds, infinitives, appositives, and parallelism
6. Recognize and use a variety of options for introductory, body, and concluding paragraphs
7. Critique constructively and revise his/her own work and the work of others
8. Demonstrate effective prewriting strategies such as choosing and narrowing a topic, brainstorming, and organizing
9. Write a fluent, unified, coherent, well-organized and adequately developed paragraph with a clear topic sentence
10. Write multi-paragraph essays with the qualities mentioned above
11. Utilize process-writing techniques to revise, edit, and re-write paragraphs and essays
12. Use various rhetorical strategies such as compare/contrast, cause/effect, persuasion, and summary effectively in paragraphs and essays
13. Use appropriate transitions between sentences and paragraphs

14. Write and correctly punctuate simple, compound, and complex sentences. Use parallel structure correctly in sentences
15. Increase and diversify English vocabulary
16. Conduct research using library resources and internet effectively
17. Write a works cited list using correct bibliographic form

WR 097 - Introduction to Essay Writing

3 Credit(s)

This course introduces students to essay writing and prepares students for WR115. Students will demonstrate control and understanding of the writing process: generate and organize ideas, write drafts, revise, and edit paragraphs and multi-paragraph essays. Students will learn to recognize and correct grammatical errors in their writing. Course activities may be enhanced through conferences, workshops, and/or online modules.

Corequisite: EL 117

Learning Outcomes

Upon successful course completion, the student will:

1. Use pre-writing skills to plan focused, well-organized paragraphs and multi-paragraph essays
2. Write unified, coherent, and adequately developed paragraphs with clear topic sentences
3. Write well-developed essays that include a thesis statement and unified, coherent, and adequately developed paragraphs with clear topic sentences
4. Recognize and use a variety of options for introductory, body, and concluding paragraphs
5. Demonstrate control of a variety of organizational strategies at the essay level (such as narrative, process, opinion/persuasive, summary, comparison/contrast, definition, description, cause/effect, and exemplification)
6. Use appropriate transitions between sentences and between paragraphs
7. Critique constructively and revise his/her own work and the work of others

WR 105 - Writing for Scholarships

2 Credit(s)

This course focuses on prewriting, descriptive writing, organizational strategies, sentence fluency, concision, and, importantly, revision. We will look at scholarship essays from former WR 105 students who have earned scholarships, to define what works and to employ these techniques in your own letters. We will collaborate to determine how to communicate your personal experiences such that they inspire you and touch the lives of others. You will learn to present your self-inquiry in the form of effective scholarship essays. Then, you will include these essays in a scholarship application to the Oregon Office of Student Access and Completion (OSAC) and, optionally, another scholarship application of your choice. It is not uncommon for students to rewrite their essays multiple times. Note: This two-credit writing course will not count toward a WR 115/115W, 121, 122, 123 or 227 writing course.

Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Understand and be able to respond to Oregon Student Assistance Commission essay questions.
2. Be able to write concisely and engagingly about their experiences and their professional / academic goals.
3. Complete four scholarship essay.

WR 115 - Introduction to College Composition

4 Credit(s)

This course introduces students to the expectations of college-level reading, thinking, and writing. Students will be introduced to rhetorical concepts and engage in a collaborative writing process to produce projects for a variety of purposes and audiences, across more than one genre. Reading, writing, and critical thinking activities will focus on inquiry and the development of the metacognitive awareness of individuals as writers. Students will produce one formal essay of 700-800 words and a total of 2000-2500 words of revised, final draft copy over the term that incorporate source material and practice MLA citing and attribution conventions. Courses may include multimodal projects.

Prerequisite: Appropriate Lane Writing Placement or Pass or letter grade of C- or higher in WR 093 or WR 097, or successful completion of ABSE Reading and Writing for College Success AND Bridge to College.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Develop and practice rhetorical awareness. Recognize key rhetorical concepts;

begin to apply these concepts through analysis of texts

2. Develop and demonstrate critical reading strategies of college-level texts; practice critical reading as a component of the writing process
3. Practice the evaluation of sources provided; recognize the conversational nature of academic conversations and of research
4. Identify and practice stages of the writing process
5. Recognize that composing processes and tools are a means to discover and reconsider ideas
6. Experience collaborative aspects of writing processes through giving and receiving feedback
7. Recognize and practice the conventions of Standard Edited English
8. Understand the effects of genre on text structure, paragraphing, sentence structure, and word choice. Practice citation conventions
9. Recognize that composing practices enact and impact thinking
10. Investigate how to transfer and apply writing knowledge to new contexts

WR 115W - Introduction to College Writing: Workplace Emphasis

3 Credit(s)

This course introduces students to the expectations of workplace reading, writing, and project management. Students will be introduced to rhetorical concepts and engage in a collaborative writing process to produce projects with a variety of purposes and audiences across multiple genres. Projects may include job letters, memos, technical reports, and other documents and multimodal projects drawn from students' chosen fields. Students will produce 2000-2500 words of revised, final draft copy or appropriate multimodal analogs for this amount of text; at least one of the projects will incorporate source material and practice attribution conventions. This course fulfills writing requirements for some Lane programs.

Note: This three-credit writing course will count as a prerequisite for WR 121 at Lane only. Students who plan to transfer should be aware that most other colleges and universities in Oregon will not accept WR 115W as a prerequisite for WR 121.

Prerequisite: Appropriate Lane Writing Placement or Pass or letter grade of C- or higher in WR 093 or WR 097 or successful completion of ABSE Reading and Writing for College Success AND Bridge to College.

Learning Outcomes

Students who successfully complete this course will be able to:

1. Understand the importance of target audience, purpose, and point of view
2. Make stylistic decisions appropriate to the subject, situation, and audience
3. Develop critical thinking skills through pre-drafting, writing, feedback from peers, and frequent revising as well as through close examination of student and professional writing
4. Understand what it means to make writing choices that serve a specific audience, situation, and communications purpose
5. Develop problem-solving abilities
6. Work with other writers to critique and revise his/her own work and the work of others
7. Assess his/her own writing strengths and weaknesses
8. Express ideas clearly, concisely, and carefully in forms compatible with success in the workplace
9. Show competence in grammar, usage, and punctuation
10. Know and use appropriate formatting styles
11. Know how to acknowledge sources and avoid plagiarism

WR 121 - Academic Composition

4 Credit(s)

This course focuses on rhetorical reading, thinking, and writing as means of inquiry. Students will gain fluency with key rhetorical concepts and utilize these in a flexible and collaborative writing process, reflecting on their writing process with the goal of developing metacognitive awareness. They will employ conventions, including formal citations, appropriate for a given writing task, attending to the constraints of audience, purpose, genre, and discourse community. Students will compose in two or more genres. They will produce 3000-3500 words of revised, final draft copy or an appropriate multimodal analog for this amount of text. Students will produce at least one essay that integrates research and demonstrates an understanding of the role of an assertive thesis in an academic essay of at least 1000 words.

Prerequisite: Appropriate Lane Writing Placement or WR 115 or WR 115W

Learning Outcomes

Students who successfully complete this course will be able to:

1. Exhibit rhetorical awareness and rhetorical competence
2. Use key rhetorical concepts for analyzing and composing a variety of texts
3. Critically read and use college-level texts to support writing goals

4. Locate, evaluate, and use sources for writing goals
5. Demonstrate an understanding of the communal and conversational nature of research
6. Develop and compare flexible strategies for composing processes
7. Collaborate in the exchange of writing as both reviewer and author, generating and evaluating feedback as part of the revision process
8. Use a variety of technologies in composing for different purposes and audiences
9. Recognize and apply the conventions of Standard Edited English
10. Vary text structure, paragraphing, sentence structure, and word choice appropriate to genre
11. Apply citation conventions
12. Reflect on and document procedural knowledge gained in the areas of writing strategies
13. Discuss how to transfer and apply writing knowledge to new contexts

WR 122 - Argument, Research and Multimodal Composition

4 Credit(s)

This course continues the focus of WR 121 in its review of rhetorical concepts and vocabulary, in the development of reading, thinking, and writing skills, along with metacognitive competencies understood through the lens of a rhetorical vocabulary. Specifically, students will identify, evaluate, and construct chains of reasoning, a process that includes an ability to distinguish assertion from evidence, recognize and evaluate assumptions, and select sources appropriate for a rhetorical task. Students will employ a flexible, collaborative, and appropriate composing process, work in multiple genres, and utilize at least two modalities. They will produce 3500-4500 words of revised, final draft copy or an appropriate multimodal analog for this amount of text. Students will produce at least one essay of at least 1500 words, demonstrating competence in both research and academic argumentation.

Prerequisite: WR 121 or WR 121_H

Learning Outcomes

Upon successful completion of this course, the student will be able to:

1. Exhibit rhetorical awareness & competence
2. Apply key rhetorical concepts through analyzing and composing a variety of texts
3. Analyze and synthesize college-level texts for specific and varied rhetorical tasks/goals
4. Engage in research as a recursive and inquiry-based process
5. Capitalize on the communal and conversational nature of academic research in composing a variety of texts
6. Demonstrate flexible and rhetorically appropriate composing strategies
7. Provide constructive peer feedback
8. Respond effectively to peer and instructor feedback
9. Experiment with and adapt composing processes for a variety of technologies and modalities
10. Deliberatively use the conventions of Standard Edited English to enhance meaning
11. Consistently maneuver text structure, paragraphing, sentence structure, and word choice appropriate to genre
12. Systematically and skillfully apply citation conventions
13. Reflect on and document procedural knowledge gained in the areas of writing strategies
14. Transfer and apply writing knowledge to new contexts

WR 123 - Composition: Research Writing

4 Credit(s)

While continuing the goals of WR 122, this course emphasizes skills needed to complete a quarter-long research project. Students will write a research essay that supports an analytical and/or assertive thesis. WR 123 also emphasizes the critical reading and writing skills involved in defining and researching a genuine problem of inquiry, as distinct from encyclopedic reporting.

Prerequisite: WR 122 or WR 122_H

Learning Outcomes

Students who successfully complete this course will be able to:

1. Engage in and value a respectful and free exchange of ideas
2. Actively read challenging college-level texts, including: annotation, cultivation/development of vocabulary, objective summary, identification and analysis of the thesis and main ideas of source material
3. Evaluate sources for authority, currency, reliability, bias, sound reasoning, validity, and adequacy

4. Research and synthesize disparate sources, weighing various conclusions based on the evidence presented in order to build a credible research-based discussion
5. Develop a thesis or claim based on the evaluation and synthesis of primary and secondary sources
6. Make appropriate and effective rhetorical choices during all stages of the writing process: invention, drafting, revising, and editing
7. Use appropriate rhetorical strategies to support an argumentative or position-based thesis/claim in a research-based paper
8. Address issues of purpose and audience, anticipating and preparing for reactions to written work by audiences outside the classroom
9. Choose appropriate language (voice, tone, style, etc.) to persuade an informed and educated reader or to assert a position taken by a writer
10. Demonstrate the ability to organize longer research papers with an introduction, logically arranged body paragraphs that develop the thesis and synthesize information from a variety of sources, and a conclusion
11. Utilize an organization that will reflect the scope and nature of the thesis
12. Thoroughly develop and support the thesis with a balanced and insightful presentation of evidence
13. Demonstrate an ability to summarize, paraphrase, and quote sources in a manner that distinguishes the writer's voice from that of his/her sources and that gives evidence of understanding the implications of choosing one method of representing a source's ideas over another
14. Use library resources (e.g., subject indexes, online databases, etc.) to locate information, recognizing that there are different resources available for different purposes/subjects
15. Demonstrate successful use of the research process: writing research proposals, formulating incisive questions, conducting library and/or field research, taking careful notes, and compiling an annotated bibliography or review of literature
16. Use advanced research techniques to locate sources (e.g., subject indexes, Boolean search terms, etc.)
17. Recognize the recursive nature of both research and writing
18. Demonstrate the ability to use Edited Standard Written English (ESWE) to address an academic audience
19. Use a writer's handbook and/or other resources with increasing sophistication for style, grammar, citation, and documentation
20. Include index, pagination, and appropriately integrated visuals into projects, as needed

WR 227 - Technical Writing

4 Credit(s)

Students will produce instructive, informative, and persuasive documents aimed at well-defined and achievable outcomes within a variety of technical/professional contexts. The purpose and target audience of each document determine the style that an author chooses, which includes document layout, vocabulary, sentence and paragraph structure, and visuals. Students can expect to gather, read, and analyze information and learn a variety of strategies for presenting such information in attractive, carefully edited deliverables designed for specific audiences.

Prerequisite: WR 121 or WR 121_H

Learning Outcomes

Students who successfully complete this course will be able to:

1. Reflect on individual and professional-ethical responsibilities within an organizational context
2. Apply key rhetorical concepts through analyzing, designing, and composing a variety of deliverable documents for a professional/technical context
3. Effectively read and evaluate complex texts and synthesize information for specific rhetorical situations and audiences; design and compose deliverables that meet the needs of specific users/clients
4. Engage in project-based research applying appropriate methods of inquiry for clearly defined technical/professional contexts (including but not limited to user experience research and client/organization research)
5. Plan, design, and compose deliverable documents using a variety of media and communication strategies
6. Collaborate effectively with various stakeholders (e.g. peer group members, instructor, users, clients, subject matter experts) to develop and apply flexible and effective strategies for project management, including: planning, research, composing, design, and revision
7. Demonstrate appropriate, intentional, and flexible strategies for managing multi-

stage, collaborative projects

8. Accurately and effectively incorporate information from a variety of sources, including visuals and other non-linguistic texts
9. Develop and adapt document design and composition strategies to meet the demands of different organizations and contexts
10. Navigate norms of format, style, citation, and other context-specific conventions
11. Thoughtfully design and articulate an approach to achieving a document's purpose and user/audience needs
12. Reflect on individual and professional-ethical responsibilities within an organizational context

Community Connections

Academic Learning Skills

Main Campus, Building 11, Room 245, 541-463-5439, lanecc.edu/programs-academics/academic-departments/college-and-career-foundations/academic-learning-skills

Academic Learning Skills (ALS) offers courses to improve student success in general education, career technical, and transfer courses. Students who take courses offered by Academic Learning Skills gain confidence and abilities to be successful in their classes. Students improve their reading, writing, vocabulary, critical thinking, math, digital learning skills and learning/study skills.

Adult Basic and Secondary Education

Main Campus, Building 11, Room 201, 541-463-5214, Downtown Center, Room 404, 541-463-6180, lanecc.edu/programs-academics/academic-departments/college-and-career-foundations/adult-basic-and-secondary-education
The Adult Basic and Secondary Education (ABSE) department offers programs in multiple locations for General Education Development (GED) exam preparation, college preparation, career pathways and workforce exploration, and workplace skills development.

Lane Child and Family Center

Main Campus, Building 24, Room 114, 541-463-5517, lanecc.edu/get-support/daily-living-support/students-children/lane-child-and-family-center or email childcareoncampus@lanecc.edu

The Lane Child and Family Center is state licensed and nationally accredited through the National Association for the Education of Young Children and rated five stars by Oregon's Quality Rating and Improvement System. The preschool/child care program is located on the main campus and provides child care for children 30 months to 5 years of age for student, staff and community families.

Child care grant and subsidy assistance is available. Students with children enrolled in the Lane Child and Family Center may qualify to receive a CCAMPIS grant, reducing child care expenses by 75 percent. See lanecc.edu/get-support/daily-living-support/students-children/lane-child-and-family-center/child-care-access-lane-grant-ccampis.

In addition, the Lane Child and Family Center has a Preschool Promise classroom which provides free child care for children 3-4 years old. See lanecc.edu/preschool-promise/.

Continuing Education

Contact: 541-463-6100 Lane offers a variety of non-credit courses each term in career and technical (vocational) training, employment training, computers, consumer/money, art, music, foreign language, home/house/garden, health and health occupations, human development, recreation, outdoor programs, and general interest areas. Some courses are offered online.

Continuing Education includes short-term training and upgrading for a wide range of professional fields. In some cases, students can earn industry certification, continuing education units, or meet state and/or national professional examination preparation requirements. Enrollment in most courses is open to any interested person over 16 years old.

Lane offers professional training programs, including:

- Massage Therapy
- Medical Receptionist
- Nursing Assistant 1
- Nursing Assistant 2

- Personal Care Aide
- Pharmacy Technician
- Phlebotomy
- Project Management

English as a Second Language

Offered at the Downtown Center, Room 404 and at the Main Campus, Building 11, Room 201 and remotely.

The English as a Second Language (ESL) Department provides instruction for adult English language learners seeking to improve their oral and written communication skills for work, community involvement, academic, or personal goals. Courses are designed to help students with everyday communication, as well as with the transition to work or to other training and/or academic programs, including credit and noncredit programs in community colleges or universities.

KLCC Radio (89.7 FM)

KLCC consistently ranks among western Oregon's most listened-to radio stations. It is heard on 10 FM signals throughout the state, including 89.7 FM, broadcasting with 81,000 watts to serve Eugene, Springfield, Corvallis, and Albany. Other transmitters provide programming to Bend, Sisters, Roseburg, and the Oregon coast. The online portal KLCC.org streams the station's programming and features to a worldwide audience. KLCC reaches more than 100,000 Oregonians each week across platforms.

KLCC maintains an active news department that provides comprehensive coverage of the region. It has been the recipient of multiple honors, including consecutive regional Edward R Murrow Awards for "Overall Excellence" in the small market radio division from the Radio and Television Digital News Association. Additional industry accolades have included recognition for its coverage of Native American issues, feature reporting, and hard news. Working alongside professionals, KLCC provides internship and mentoring opportunities for aspiring journalists from Lane Community College, University of Oregon, and other local institutions.

KLCC is also known for its offerings of jazz, folk, and eclectic programming, as well as live broadcasts from Oregon festivals and concerts. It regularly airs announcements from local non-profit organizations and discussions on issues of concern to Oregonians.

KLCC is a non-commercial service, guided by the mission, *"To engage the mind, enrich the spirit and deepen understanding of our community and the world."*

Financial support for KLCC is provided by contributing listeners, business underwriters, and philanthropic organizations.

KLCC was originally licensed by Lane Community College in 1967. It became a charter member of National Public Radio in 1971 and is the region's local outlet for such programs as Morning Edition, All Things Considered, and This American Life. In addition to its 24/7 broadcast schedule, expanded digital offerings highlight Oregon's culture and economy.

Lane Community College Foundation

Main Campus, Building 19, Room 270, 541-463-5135, lanecc.edu/about-lane/foundation or email foundation@laneccfoundation.org The Lane Community College Foundation raises and invests funds for scholarships, programs, and capital needs.

Program and Capital Support: The state provides only a portion of the funding necessary to support instructional programs. Gifts from individuals and businesses strengthen Lane's ability to provide education and career training to our students each year.

Scholarships: Scholarships open the door to higher education for many people who otherwise could not afford college. Gifts for scholarships are an investment in the future.

Tax-deductible gifts to support Lane's programs and students should be made payable to: LCC Foundation, 4000 E. 30th Avenue, Eugene, OR 97405. Call 541-463-5135 for more information on how you can help. If you are interested in applying for a scholarship, visit www.lanecc.edu/about-lane/foundation/foundation-scholarships/apply-lcc-foundation-scholarship

Library

Residents of the Lane Community College District who purchase a Community Borrower card have access to the following resources:

- Check out materials from the LCC Library
- Place interlibrary loan requests

- Community Borrowers who are affiliated with LCC (clinical affiliates and volunteers) may also access online databases from off-campus Summit borrowing and technology check-outs are not available to Community Borrowers. Learn more at www.library.lanecc.edu/circ/communityborrower

Senior Companion Program

Contact: 541-463-6260, www.lanecc.edu/community/resources-community/senior-companion-program/about-senior-companion-program

The Senior Companion Program of Lane County improves the quality of life for the citizens of Lane County by providing supportive services and companionship to disabled and isolated adults, allowing them to live as independently as possible. Senior Companions in Lane County benefit from service opportunities by participating in scheduled activities such as providing transportation, companionship and conversation, weekly well-check phone calls and assistance with light tasks. Companions experience increased self-esteem and connection through vital community service and on-going training. This program is offered through AmeriCorps Seniors.

Small Business Development Center

Downtown Center, 101 W. 10th Ave., Suite 133, 541-463-6200, www.lanesbdc.com

The Lane Small Business Development Center offers a multitude of support services for small businesses, from start-up to established, from small to medium, with 1,500 employees and up to \$25 million in sales. Whether your business has been in existence for a hundred years or is just starting out, the Lane SBDC has the right specialized tools and expertise to help you find success.

Services include:

- Small business management programs
- Entrepreneurial workshops and registration
- confidential, no-cost business advising and resources
- Lane Business Link
- SHRM, CCB, Real Estate Broker pre-license training
- Global trade support
- Capital access support
- Market research support

Specialized Support Services

Contact: Patsy Slaughter via voicemail message at 541-463-5103 or by email at slaughterp@lanecc.edu and Patsy will get back to you within 24 hours.

Learn more at www.lanecc.edu/community/education-community/specialized-support-services

Specialized Support Services (S3) provides vocational training and employment support to adults with developmental/intellectual disabilities. S3 operates as a cooperative venture between Lane Community College, the Lane County Office of Developmental Disabilities, and the State of Oregon Department of Human Services Seniors and Persons with Disabilities Division. S3 offers individual training to develop social, work, teamwork, and communication skills for future competitive employment.

Governance and Staff

Lane Community College Board of Education

Seven elected, non-paid citizens comprise the Board of Education. Elections are held in May of odd-numbered years and openings are staggered. Vacancies due to unexpired terms are filled by board appointment. Board members are elected to four-year terms. Learn more at lanecc.edu/about-lane/leadership/board-education. The Board of Education has primary authority for establishing policies governing the operation of the college and for adopting the college's annual budget. The board's charge is to oversee the development of programs and services that board members believe will best serve the needs of the people of the Lane Community College district.

The board holds public meetings typically the third Wednesday evening of each month, normally in the Boardroom, Building 3, Main Campus. Additional meetings are held as needed.

Zone 1 - Western part of college district

Holli Johnson, African American/Black Student Success program coordinator, Eugene, elected May 2021, term expires June 30, 2025

Zone 2 - Northern part of college district

Angela VanKrause, healthcare/financial analyst, Eugene, elected May 2019, term expires June 30, 2023

Zone 3 - Marcola and Springfield part of college district

Mike Eyster, retired higher education administrator, Springfield, elected May 2017, re-elected 2021, term expires June 30, 2025

Zone 4 - Eastern part of college district

Austin Fohnagy, business and employment specialist, Vida, elected May 2021, term expires June 30, 2025

Zone 5 - Eastern part of college district

Steve Mital, sustainability director, Eugene, elected May 2021, term expires June 30, 2025

Position 6 - At Large

Rosie Pryor, retired marketing and strategy officer, Eugene, elected May 2011, re-elected May 2015 re-elected May 2019, term expires June 30, 2023

Position 7 - At Large

Lisa Fragala, teacher, Eugene, appointed October 2018, elected May 2019, term expires June 30, 2023

Administration

The college is administered by the president, under authority delegated by the Lane Community College Board of Education, with assistance from vice presidents, associate vice presidents, division deans, and directors.

- Margaret Hamilton**, President; Ph.D. Widener Univ.; M.S. Univ. of Delaware; B.S. State Univ. of New York
- Paul Jarrell**, Provost and Executive Vice President Academic and Student Affairs, Ph.D. Univ. of Oregon, B.S. Ohio Univ.
- George Stalliard**, Vice President Finance and Operations, DHRM, Nova Southeastern University, M.S. University of Central Texas, B.S. Univ. of Central Texas
- Jennifer Frei**, Associate Vice President, Academic Affairs; Ph.D. Univ. of California Davis; M.A. California State Univ. Sacramento; B.A. Univ. of California Davis
- Grant Matthews**, Associate Vice President, Career Technical Education and Workforce Development; M.P.A. Portland State Univ., B.A. Oregon State Univ., A.A. Chemeketa Community College
- Mindie Dieu**, Associate Vice President, Student Affairs, Ph.D. Univ. of Oklahoma, M.Ed. Univ. of Oklahoma; B.A. Oklahoma State Univ., A.A. Tulsa Community College
- Richard Plott**, Executive Director Institutional Effectiveness; Ph.D. Univ. of Technology, Perth, Australia; M.A. Univ. of Texas Dallas; B.A. Univ. of Texas Dallas
- Shane Turner**, Chief Human Resource Officer; M.S. Northern Arizona Univ., B.A. Carroll College, A.A.S. Northwest College

Emeriti

- Dr. Mary Spilde was named president emerita by the Board of Education in 2017. Dr. Spilde was Lane's sixth president and served from 2001-2017.
- The late Dr. Eldon G. Schafer was named president emeritus by the Board of Education in 1985. Dr. Schafer served as Lane president from 1970-1985.
- The late Dr. Dale Parnell was named president emeritus by the Board of Education in 2004. Dr. Parnell was Lane's founding president and served from 1965-1968.

Oregon State Board of Education

As one of Oregon's 17 publicly supported community college districts, Lane operates under the general direction of the Oregon State Board of Education:

- Kimberly Howard Wade**, Portland
- Guadalupe Martinez Zapata**, Portland
- George Russell**, Eugene
- Bridgett Wheeler**, Coquille
- Jennifer Scurlock**, Eugene

- **Vacant**
- **Colt Gill**, Deputy Superintendent of Public Instruction

Higher Education Coordinating Commission and the Office of Community Colleges and Workforce Development

The State of Oregon's Higher Education Coordinating Commission (HECC) is the primary state entity responsible for ensuring pathways to postsecondary education success for Oregonians statewide, and serves as a convener of the groups and institutions working across the public and private higher education arena.

- **Ben Cannon, HECC Executive Director**

The Office of Community Colleges and Workforce Development (CCWD) operates under the HECC and provides coordination, leadership, and resources to Oregon's 17 locally-governed community colleges, 17 adult basic skills providers, community-based organizations and other partnerships.

- **Donna Lewelling, CCWD Director**

Lane Community College Budget Committee

The Budget Committee consists of seven members of the Board of Education as well as seven citizens from the community. Each board member appoints one citizen to the committee for a term of three years. Terms are staggered so that about one third of the appointed terms end each year. The Budget Committee reviews the proposed budget each fiscal year and makes a recommendation on the budget in accordance with Oregon's Local Budget Law for final enactment.

The 2021-2022 Budget Committee Members

- Ian Winbrock, term expires 2023, program assistant, Eugene
- Siobhan Canc  l, term expires 2024, Equity, Inclusion and Diversity Consultant, Eugene
- Holle Bauer Schaper, term expires 2023, statistician and website coordinator, Springfield
- Kevin Matthews, term expires 2021, editor, Dexter
- Susan Fahey, term expires 2024, finance director
- Hillary Kittleson, term expires 2022, retired finance director, Eugene
- Celine Swenson Harris, term expires 2023, legislative chief of staff, Springfield

Instructional Staff

View the list of Instructional Staff, which is maintained by the Human Resources Department, located on the LCC Main Campus, Building 3, 1st Floor, 541-463-5586, TDD 541-463-3999, www.lanecc.edu/administration/human-resources

Advisory Committees

Volunteers from regional and local businesses and industries are appointed by the Lane Community College Board of Education to advisory committees. These committees offer advice and assistance to instructional programs, enabling the college to tie its programs closely to current work practices and employment opportunities. The college's career technical programs, as well as many noncredit programs, have advisory committees.