

# LANE COMMUNITY COLLEGE



**2020**  

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**2021**

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# Welcome from President Hamilton

Welcome to Lane Community College and congratulations on your choice to attend one of Oregon's premier community colleges. For more than 50 years, Lane has provided exemplary education, training and personal enrichment programs for our community, earning a national reputation for excellence, innovation and sustainability.

You have chosen a college that transforms lives through learning both in the classroom with highly qualified faculty and outside of the classroom through our many support services and activities. While you are here, I invite you to browse the library, find a favorite place to study, and become a part of the Lane community by joining a club, playing a sport, or meeting new people who will help you better understand the world in which you live.

At Lane, you are never far from a campus center. Whether you enjoy a downtown vibe or a coastal setting, we have a place for you to study and complete your degree or certificate. We also have a comprehensive offering of online courses to help you complete your goal from any location at a time convenient to you.

All of us at Lane are here to ensure that you have a personalized educational experience that will help you achieve your goals. Lane Community College transforms lives through learning—we're here for you.

I look forward to seeing you on campus, and I wish you a happy, healthy and memorable year at Lane!

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 375,000 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 the Mary Spilde Center in downtown Eugene, centers in Cottage Grove, Florence, the Eugene Airport and outreach sites in the community.

Lane employs more than 1,000 employees who serve over 24,000 students annually. Approximately 44% are regular credit students, 19% are College Now credit students, and 37% are non-credit 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 Core Learning Outcomes

The Core Learning Outcomes distill the essential human characteristics that faculty and their students will strive to develop through education at Lane. This education should generate learning that prepares students to deal with a complex, diverse, and changing world.

## Think Critically

Students who think critically:

- 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 who engage:

- 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 who create:

- 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 who communicate effectively:

- Select and 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 who apply learning:

- 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

# General Information

## 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 2020-21

For full calendar, see [lanec.edu/calendars/academic-calendar](http://lanec.edu/calendars/academic-calendar)

	Summer	Fall	Winter	Spring
<b>Registration begins</b> (for dates and times, see <a href="http://lanec.edu/calendars/registration-calendar">lanec.edu/calendars/registration-calendar</a> )	May 2020	May 2020	Nov 2020	Feb 2021
Term starts	June 22	Sept 29	Jan 4	March 29
<b>Finals week</b> (for days and times, see <a href="http://lanec.edu/schedule/final-exam-schedule">lanec.edu/schedule/final-exam-schedule</a> )		Dec 7-11	March 15-19	June 7-11
Term ends	Sept 12	Dec 12	March 20	June 12
Commencement				June 12

## Lane Online

Students can take courses any time and from anywhere you have an internet connection! LaneOnline offers students the opportunity to earn credits that can lead to degrees by taking online and hybrid courses. For more information, please see LaneOnline in the Other Learning Opportunities section of this catalog, or at [Lanecc.edu/Laneonline](http://Lanecc.edu/Laneonline).

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

## Transportation

### LTD Bus Passes

Lane Community College students taking a credit class on main campus, the Mary Spilde Downtown Center, or the Aviation Academy or ESL, ABSE, or GED students taking classes at main campus or the Mary Spilde Downtown Center, are eligible for a Lane Transit District (LTD) bus pass when they pay the \$27 transportation fee (subject to change). 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 [lanec.edu/facilities/transportation/lcc-bus-pass](http://lanec.edu/facilities/transportation/lcc-bus-pass). For bus routes and other information, go

to [ltd.org](http://ltd.org) or call LTD Customer Services at 541.687.5555 or 711 (TTY—Oregon Relay).

### BikeLane

[lanec.edu/sustainability/bikelane](http://lanec.edu/sustainability/bikelane)

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 [lanec.edu/copps/documents/vehicle-regulations](http://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 Arcade (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 or go to [lanec.edu/facilities/transportation](http://lanec.edu/facilities/transportation)

## 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

101 W. 10th, Eugene, OR 97401, (541) 463-6100, [lanec.edu/ce](http://lanec.edu/ce)

Lane offers a variety of noncredit 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. Noncredit 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 which 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, [nwccu.org](http://nwccu.org).

### Other Accreditations, 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
- Culinary Arts, accredited by the American Culinary Federation Foundation Accrediting Commission, a specialized accrediting commission recognized by the Council for Higher Education Accreditation. A student graduating from the program will be eligible to receive national certification status as a Certified Culinarian (CC).
- 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, 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, evaluated and accredited by the Association of Equipment Distributors Foundation (AEDF). Membership: Northwest Diesel Industry Council (NDC) and Oregon Trucking Association (OTA).
- Flight Technology Private Pilot, Instrument and Commercial Flight Training is FAA Part 141 approved.
- Geographic Information Science, endorsed by the National GEO Tech Center of Excellence.
- Hotel/Restaurant/Tourism Management, accredited by the Accreditation Commission for Programs in Hospitality Administration (ACPHA). Students graduating from the program will receive national certification status as a Certified Hospitality Graduate (CHG).
- 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, 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). The Paramedic and EMT Programs are accredited by the State of Oregon Department of Education, Office of Community Colleges and Workforce Development, Higher Education Coordinating Commission.
- 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.

#### Credit Student Outcomes

From a cohort of full-time, first time in college, degree-seeking students who enrolled at Lane fall term of 2016, by August 2019, 18% had completed a degree and 24% transferred to another higher education institution. (Source: IPEDS)

## Nondiscrimination Statement

[lanecc.edu/copps/documents/nondiscrimination-statement](http://lanecc.edu/copps/documents/nondiscrimination-statement)

Lane Community College is committed to providing a working and learning environment that is free from discrimination, harassment and retaliation. Lane is committed to equal opportunity in education and employment, affirmative action, diversity, and compliance with the Americans with Disabilities Act and VEVRAA. The college prohibits discrimination in admissions, employment, recruitment and access to college programs, activities and services on the basis of race, color, national origin, sex, marital status, familial relationship, sexual orientation, pregnancy, age, disability, religion, expunged juvenile record, or veterans' status, and all other protected categories as defined by federal or state law.

The college intends to comply with all statutes that prohibit discrimination in education, including Title VI and Title VII of the Civil Rights Act of 1964, Title IX

of the Education Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, the Age Discrimination Act of 1975, the Americans with Disabilities Act of 1990 and the Americans with Disabilities Amendments Act of 2008. The College also intends full compliance with the Title IX sexual harassment prevention requirements. The college shall take timely actions to prevent, correct, and if necessary, discipline behavior that violates harassment and discrimination guidelines. This commitment is made by the college in accordance with federal, state, and local laws and regulations, as well as in alignment with college policies and procedures.

Inquiries may be directed to the Chief Human Resource Officer, Lane Community College, 4000 East 30th Avenue, Eugene, Oregon 97405-0640, (541) 463-5585.

**Title IX inquiries** may be directed to the Director of the Gender Equity Center & Title IX Coordinator, (541) 463-5870, or to the Director of Student Standards, (541) 463-5787, or to the Chief Human Resource Officer, (541) 463-5585.

**Section 504 inquiries** may be directed to Chief Human Resource Officer and Section 504 Coordinator, Building 3, Room 114, (541) 463-5585.

**Requests for accommodations** may be directed to the Center for Accessible Resources (CAR), Main Campus, Building 19, Room 263A

- Phone: Voice, (541) 463-5150
- TTY: 711
- FAX: (541) 463-4739
- Email: [AccessibleResources@lanecc.edu](mailto:AccessibleResources@lanecc.edu)

## 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 about financial aid, 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 admission 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.

**Residency:** More information about residency, including tuition rates and documentation requirements, is provided in the Tuition, Financial Aid and Payment 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.

## How to Enroll

From [lanecc.edu](http://lanecc.edu), go to the Apply and Enroll tab at the top left, select Apply Now.

## Admissions

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 close one week before each term starts. 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 online at [lanecc.edu/apply](http://lanecc.edu/apply).

## International Programs Admissions

Building 11, Room 235, 541.463.3434

Lane welcomes students who want to come to the USA to study on student visas to both the International English Program (ESL) and 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 most recent school attended and proof of financial support. Other or original documents may be required in some cases. Go to [lanecc.edu](http://lanecc.edu) 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. For additional information on summer term please see [lanecc.edu/international](http://lanecc.edu/international). 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 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 [lanecc.edu/esl](http://lanecc.edu/esl)

## 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@lanecc.edu](mailto:hpapplicationcenter@lanecc.edu).

### Limited Enrollment Programs

The programs listed below are limited enrollment requiring that the program be listed as the major or requiring a special application for acceptance listing as the major. Contact the department for information.

Program	Department
Apprenticeship Trades	Apprenticeship
Automotive Technology	Advance Technology
Early Childhood Education	Social Science
Energy Management Technician	Science
Fitness Specialist	Health and Physical Education
Flight Technology	Aviation Academy
Graphic Design (the second year)	Arts Division

## 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 myLane under the myEnrollment tab and When Can I Register link. For information, visit the website at [lanecc.edu/calendars/registration-calendar](http://lanecc.edu/calendars/registration-calendar). For questions, email [AskLane@lanecc.edu](mailto:AskLane@lanecc.edu).

## Class Schedule and Schedule Changes

The online class schedule is available at [lanecc.edu/schedule](http://lanecc.edu/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 myLane. Schedule changes could result in additional tuition and fees.

Some classes require the instructor’s consent to enroll. myLane will inform students of this requirement when attempting registration.

Increasing the number of credits for a variable credit class can be processed using myLane 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 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 in the Refunds section.

## Tuition, Fees, Financial Aid

### Noncredit Community Education Classes

For information about costs associated with Continuing Education and Small Business Development Center classes, please contact the respective departments.

### Credit Classes

Credit students pay the following charges:

Tuition	see below
Class fees	listed next to each class in the online class schedule
Technology fee	\$11 per credit
Online and Hybrid Course fee	\$10 per credit (maximum = \$50.00 per course)
Other fees	see below

### Tuition\*

Residents of Oregon	\$121.00 per credit hour
Non-residents of Oregon	\$281.50 per credit hour
Non-resident online tuition	\$121.00 per credit hour

### International students

Summer, fall, winter and spring terms	1-5 credits: \$305.50 per credit hour
	6-8 credits: \$1,947/term
	9-11 credits: \$2870/term
	12-18 credits: \$3280/term

\*Subject to change pending Board approval

## Other Credit Student Fees

### ASLCC Student Activity Fee

\*This fee is subject to change pending ASLCC election results

- Credit students taking main campus classes: \$61.52

### Other student fees

- Student Life (clubs) \$1.75
- ASLCC \$10
- BSU \$.95
- OSPIRG \$3
- Longhouse \$3
- International Study programs \$2
- SPA \$1.80
- Childcare Subsidy \$8.62
- Athletics and Recreational Sports \$11.50
- TORCH \$2.90; Gender Equity Center \$2
- Learning Garden \$1.50
- Maxwell Student Veteran’s Center \$3
- NASA \$.70
- MeCHA \$.70

- GSA \$.70
- APISU \$.95
- OSA \$3.75
- Student Legal Services \$2.70

**Other fees**

Fees are subject to annual increases.

- Credit by Exam and Credit by Assessment: Examination/assessment fee \$50 per review
- First Time Credit Enrollment Fee \$30
- Student Health Fee \$45 per term

**Transportation Fee (nonrefundable)**

- Credit students on main campus \$27 per term
- All noncredit classes (included in the Registration fee) and credit classes not held on the main campus \$5 per term

International credit students: \$125 per term

**Photo ID: \$5**

A LCC photo ID is not required to attend Lane. It is available to all currently registered students as an alternate form of photo identification. A card may be purchased from the Titan Store, Center Building.

**Transcript fee**

- Transcript \$5 - \$10 (depending on delivery method)
- Transcript Rush Fee\*\* \$5

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.

\*\* Transcripts that are purchased from Enrollment Services or for transcript requests that indicate that they need rush service will be charged the Transcript Rush Fee.

**Average Total Costs**

Typical average yearly expenses excluding room and board, transportation, tools, and personal expenses:

Tuition .....	\$5082
Books* .....	\$1515
Special and Miscellaneous Fees (varies by program) .....	\$581
Student Activity Fees .....	\$185

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

Tuition rates, fees and refunds are subject to change without prior notice.

\* 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 [lanecc.edu/oer](http://lanecc.edu/oer) or email [oer@lanecc.edu](mailto:oer@lanecc.edu)

**Differential Fee Program**

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 courses in the following programs currently have differential fees: Automotive Technology, Culinary Arts, Diesel Technology, Manufacturing Technology, Dental Hygiene, Dental Assistant, EMT/Paramedicine, Medical Assistant, Health Information Management, Nursing, Practical Nursing, and Physical Therapist Assistant.

**Determination of Residency**

**Residents of Oregon**

**In-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 printing out a residency form available in the forms section at [lanecc.edu/esfs/enrollment-services-forms](http://lanecc.edu/esfs/enrollment-services-forms). Students must hand the form directly to an Enrollment Services advisor at the main campus. 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-District includes Lane County, Monroe Elementary District, and Harrisburg Union High School District.

**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. For more information, visit the website of the institution you are interested in attending.

**Out-of-State and International**

There are two residency categories in addition to In-District and In-State:

- 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 Veteran's 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, Building 1. 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 affect 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.

**Noncredit 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 [fafsa.gov](http://fafsa.gov). The FAFSA is available now for students applying for aid during the 2020-2021 academic year. The Financial Aid process takes approximately 6-8 weeks. Students should apply as early as possible after October 1, 2019 for the 2020-2021 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. For more information, see [lanecc.edu/finaid/eligible](http://lanecc.edu/finaid/eligible).

To view further information regarding the financial aid process at Lane, see [lanecc.edu/finaid](http://lanecc.edu/finaid).

**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. See Refunds and Financial Aid for more information.

You may pay your college bill in the following ways:

**By Web**

Payments can be made on the web by check or savings account, VISA or MasterCard. Access myLane by logging into: [mylane.lanecc.edu](http://mylane.lanecc.edu). Once in myLane, click on "myFinances" tab, then click on "Make an Online Payment." Contact Student Accounts at 541.463.3011 if you have questions about payments on the web.

**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 ('L' student ID number).

### With 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 doesn't receive your authorization in a timely manner, late fees will be added to your account balance. If you have questions, visit [lanecc.edu/collfin/sponsored-accounts](mailto:lanecc.edu/collfin/sponsored-accounts) or email [SponsoredAccounts@lanecc.edu](mailto: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: [lanecc.edu/collfin/college-account-payment-plans](mailto:lanecc.edu/collfin/college-account-payment-plans)

## Deferred Billing Terms Agreement

When you register for the first time, the college sets up a college 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, you have automatically accepted the terms of Lane's Deferred Billing Agreement. See [lanecc.edu/copps/documents/accounts-receivable-billing](mailto:lanecc.edu/copps/documents/accounts-receivable-billing) to access the Deferred Billing agreement. Furthermore, by registering for any class at Lane, you are agreeing to retrieve your 1098T form by accessing the electronic version in myLane. The college does not mail 1098T's.

**Payments On Account Using myLane at lanecc.edu** Students will be able to make payments on outstanding balances using myLane. 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 level students may use the Billing Statement link under Student Records in myLane to arrange to have a paper bill mailed. Non-credit level students will be mailed paper statements unless they opt not to receive them. myLane 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 called Third Party Payment Authorization 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 [lanecc.edu/esfs/tuition-fees-and-payments](mailto:lanecc.edu/esfs/tuition-fees-and-payments). All transactions are handled through a secure payment system.

## General Account Information

To find out how much you owe, access myLane at [lanecc.edu](mailto:lanecc.edu), click on "myFinances" tab.

**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 each subsequent term.**

## Late Fees

The college will assess a late fee of 2 percent 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 myLane. It is your responsibility to maintain a current address, phone number and email in myLane 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 insufficient funds checks or 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

- Purge advance registration for 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 which 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 in myLane 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 or in myLane and must contact the collection agency listed with the hold message in myLane 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 in myLane at [lanecc.edu](mailto:lanecc.edu).

## 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 myLane to officially drop a class.** Refer to class schedule for deadlines.

Lane has an **all or no** refund policy. 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. (Tuition is not prorated.) 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.

Class duration	Prior to start of classes	Drop Sunday week 1 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 & classes, 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 the student's responsibility to drop/withdraw from any class/classes he or she does not plan to attend. No refunds or adjustments of tuition and fees will be granted after stated refund deadlines.**

## ASLCC Student Activity and Registration Fees

If the college cancels your only 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 VISA/ MasterCard, a refund will be issued to the student by check or onto the laneccdebit card.
- The college applies all other refunds as a credit to your account. **Refund checks are mailed or loaded onto the laneccdebit card, weekly.**

- The Transportation Fee is nonrefundable after the full-term refund deadline. No exceptions will be made.

If medical/emergency circumstances beyond your control prevent you from dropping your classes by the refund deadline, you may request an exception to the refund policy. You must complete the Refund Request online form available at [lanecc.edu/collfin/student-accounts-refund-request-information/emergency](http://lanecc.edu/collfin/student-accounts-refund-request-information/emergency) documentation of the circumstances. 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 and respond.

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 prevented you from using myLane 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, 101 W. 10th Avenue, Eugene OR 97401
- Cottage Grove Center, 1275 South River Road, Cottage Grove, OR 97424
- Florence Center, 3149 Oak Street, Florence, OR 97439
- Small Business Development Center, 101 W. 10th Avenue, Suite 304, Eugene OR 97401
- 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, [lanecc.edu/advising](http://lanecc.edu/advising) or email [academicadvising@lanecc.edu](mailto:academicadvising@lanecc.edu)

Academic advising is available through the Student Success Division. Advisors are located across campus and are situated in "neighborhoods" identified with instructional programs or Career Communities. Students can access their academic advisor by emailing [academicadvising@lanecc.edu](mailto:academicadvising@lanecc.edu); by viewing the Advisors drop-in schedule at [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising), and clicking on your chosen major or area of interest; or by calling 541.463.3800.

Academic advisors have in-depth knowledge of academic departments' procedures and resources. New students meet with an academic advisor during the first term at Lane. These meetings orient students to their academic programs and provide help with course planning. Students are encouraged to meet with an academic advisor on a regular basis throughout their stay at Lane. 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 or the Advisors.

### Academic Learning Skills

Main Campus, Building 11, Room 245, 541.463.5439, [lanecc.edu/als](http://lanecc.edu/als)

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 college-level classes. Students improve their reading, writing, vocabulary, critical thinking, math, and learning/study skills. See Other Learning Opportunities

### Adult Basic and Secondary Education

Main Campus, Building 11, Room 201, 541.463.5214; Downtown Campus, Room 203, 541.463.6180, [lanecc.edu/abse](http://lanecc.edu/abse)

The Adult Basic and Secondary Education (ABSE) department offers programs in multiple locations for workplace skills development, preparation for the General Education Development (GED) exam, career pathways and workforce exploration, and college preparation. See Other Learning Opportunities

### Career Exploration Center

Main Campus, Building 1, Room 103, 541.463.3700, [lanecc.edu/cec](http://lanecc.edu/cec) or email [CareerExplorationCenter@lanecc.edu](mailto:CareerExplorationCenter@lanecc.edu)

Our faculty and staff provide high-quality career assessment tools and career information resources to help students learn more about themselves, explore

their options, clarify their direction, create a vision for their future, and take steps toward their goals.

- We recognize each students' unique strengths, interests, and values and their desire to create authentic, meaningful lives.
- We refer students to counselors for more in-depth career counseling and personal development.
- 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, [lanecc.edu/disability](http://lanecc.edu/disability) or email [accessibleresources@lanecc.edu](mailto:accessibleresources@lanecc.edu)

The Center for Accessible Resources' (CAR) mission is to provide equal access and reasonable accommodations that allow students to be active participants in the LCC community. CAR strives to promote student independence and resilience, and to foster and aid students in improving their self-advocacy skills. CAR partners with the LCC campus community to provide education, resources, and support through increasing awareness of accommodations, and promoting universal design and inclusive environments.

CAR coordinates support services and promotes disability awareness in the college community. CAR works with students and faculty to determine appropriate academic adjustments and services for students with qualified documented disabilities. Services that CAR provides include:

- Consultation, referrals and disability awareness information
- Accessibility information and maps
- Strategies for student success
- Accommodations for classes, including:
  - Test accommodations (extended time, reduced distraction)
  - Alternate format for course materials (speech-to-text, Braille)
  - Accessible Technology (audio recorders, text-to-speech)
- Service Providers (sign language interpreters, notetakers)

### Child Care

Main Campus, Child and Family Education Department, Building 24, Room 114, 541.463.5517, [lanecc.edu/cfe/lcfc](http://lanecc.edu/cfe/lcfc)

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 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. 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 [lanecc.edu/cfe/lcfc/ccampis](http://lanecc.edu/cfe/lcfc/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/](http://lanekids.org/preschool-promise/). 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** 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 child care 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 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 computing 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 [lanecc.edu/it/computerlabs](http://lanecc.edu/it/computerlabs).

## Concepcion “Connie” Mesquita Multicultural Center

The Multicultural Center promotes community building for students of color success. 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.

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, [lanecc.edu/cc](http://lanecc.edu/cc)

Free same-day or future appointments can be made by calling or coming into our center.

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 goals. Access, equity, and inclusion principles help us prioritize our efforts.

**Personal and Retention Counseling:** We provide counseling and resource referrals for students with academic or personal concerns impacting their ability to reach short term and long term goals. During open hours, there is a counselor available to help students with crises or emergencies.

**Career Counseling:** Through individual counseling, workshops, and Career and Life Planning classes, we help students to clarify 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 (CG100), Career and Life Planning (CG140), Human Relations at Work (CG203), College Success: Back On Course (CG100BC), and Improving Parent-Child Relations (CG213). Some courses are offered online. CG100 (the 3-credit course only) and CG203 may fulfill the human relations requirement for associate of applied science degrees and certificates. All 3-credit CG courses fulfill the social science requirement for the associate of applied science, associate of general studies, and associate of science degrees. All CG courses (1-3 credits) will fulfill electives for the associate of arts Oregon transfer 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, 8am-5pm, 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, [lanecc.edu/esfs](http://lanecc.edu/esfs) or email [AskLane@lanecc.edu](mailto:AskLane@lanecc.edu)

The Enrollment Services department at Lane is the place to go for information and assistance for registration, student records/transcripts, degree evaluation and other enrollment-related services. Learn more about enrolling at Get Started: Admissions and Registration

## Financial Aid

Main Campus, Building 1, First Floor Lobby, 541.463.3400, [lanecc.edu/finaid](http://lanecc.edu/finaid), or email [finaid@lanecc.edu](mailto:finaid@lanecc.edu)

Financial aid provides assistance to new and returning students in accessing federal and state funding resources to help meet the cost of their educational goals. Staff is available by email, telephone, or in person to help students understand and navigate the financial aid process. Visit [lanecc.edu/finaid](http://lanecc.edu/finaid) for office hours and more information about the financial aid process. Learn more: Tuition, Fees, Financial Aid.

## First Year Experience

Main Campus, Building 1, Room 103, (541) 463-5771, [lanecc.edu/firstyearexperience](http://lanecc.edu/firstyearexperience) or email [SuccessCoach@lanecc.edu](mailto: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 which could impede progression and goal attainment. Participation in Lane's FYE is open to all new students and a requirement for recipients of the Oregon Promise grant.

## Gender Equity Center

Main Campus, Building 1, Room 202, 541.463.5353, [lanecc.edu/gec](http://lanecc.edu/gec) or email [GenderEquityCenter@lanecc.edu](mailto: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.
- Areas of focus include:
- Resources, advocacy, and support for women including the Women in Transition (WIT) Learning Community
- GBTQ+ 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, [lanecc.edu/healthclinic](http://lanecc.edu/healthclinic)

**Health Clinic staff** includes family nurse practitioners, physicians, 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 a broad range of health care services to eligible Lane students. Our mission is to provide affordable, efficient, evidence-based health care to the students and employees of Lane Community College. The Health Clinic staff provides holistic care in a collaborative partnership with the patient, with respect for diverse beliefs and needs, assisting the patient to make informed decisions about disease prevention and management of chronic conditions. 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, minor surgeries, and lesion removal. We provide lab services and utilize Quest Diagnostics to process specimens. Quest Diagnostics will bill you or your insurance. Available services include, but are not limited to:

- Diagnosis and treatment of many acute and chronic illnesses
- Sexual health
- STI testing and treatment
- Contraception management
- Wellness/annual exams for women and men
- Student program physicals
- Sports physicals



- Immunizations/titers
- Tobacco cessation
- Treatment of minor trauma including sprains, strains, cuts, and abrasions
- Behavioral health concerns including depression, anxiety, insomnia, and stress management with referral as appropriate
- 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 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 all 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 LCC 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 classes are in session; 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. For current hours, go to [lanecc.edu/healthclinic/hours](http://lanecc.edu/healthclinic/hours)

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. These 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, go to [titancourt.com](http://titancourt.com) or call 541.234-8193.

**Other options** may available for Lane students. See [lanecc.edu/studentlife/housing](http://lanecc.edu/studentlife/housing) for more information.

## International Programs

Main Campus, Building 11, Room 235; 541.463.3434; [lanecc.edu/international](http://lanecc.edu/international)

International Programs Serves international students coming to the United States, students seeking global degree 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 level 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 [lanecc.edu/international/immigration-policies](http://lanecc.edu/international/immigration-policies).

Global Degree completion and study abroad is offered across a variety of majors and locations with options expanding to meet student needs. Please visit [lanecc.edu/international/study-abroad](http://lanecc.edu/international/study-abroad)

## Library

Main Campus, Center Building, 2nd Floor, 541.463.5273, [library.lanecc.edu](http://library.lanecc.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 7:30 a.m.-7 p.m. Monday through Thursday and from 7:30 a.m.-5:00 p.m. Friday. The Library is closed Saturday and Sunday.

**Open Educational Resources (OER):** Some classes at Lane use Open Educational Resources (OER). OER 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 [lanecc.edu/oer](http://lanecc.edu/oer) or email [oer@lanecc.edu](mailto:oer@lanecc.edu)

## Longhouse

Main Campus, Building 31, (541) 463-3660, [lanecc.edu/longhouse](http://lanecc.edu/longhouse) or email [longhouse@lanecc.edu](mailto:longhouse@lanecc.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 19, Room 233, 541-463-5847 [lanecc.edu/va](http://lanecc.edu/va)

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 servicemembers. 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.

## Performing Arts

Main Campus, Building 6, Room 204, 541.463.3108, [lanecc.edu/perarts](http://lanecc.edu/perarts)

**Music:** Music students at Lane have many opportunities to perform publicly as soloists and as members of vocal and instrumental ensembles. Lane has a chamber choir, concert choir, gospel choir, symphonic band, jazz ensemble, chamber orchestra, and jazz combos. These groups perform regularly at term's end and on special occasions, including tours. Solo musicians are encouraged to perform in showcases held once or twice a term, usually at noon, on the main stage. Some of Lane's music ensembles are open to all students, others require auditions. Lane features a two-year 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 even to beginners. Individual lessons are available for voice and various instruments. Whether students already have some music training or want to get started, they can share the joy of making music at Lane.

**Dance:** Dance students have a variety of performance opportunities throughout the year. Students perform on the main stage in Open Show at the end of each term. Open Show is an informal, supportive and fun performance opportunity where dancers of all levels hone their technical and performing skills. Intermediate and advanced level dancers audition for the Lane Dance Company where they work with faculty and guest choreographers on original and repertory work for the annual faculty concert Collaborations. The Works Student Dance Concert showcases student choreographers and dancers in a formal theatrical setting. Students move from the studio studying choreography, to the stage where they learn about 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 Productions:** Productions are the logical outcome of class work, and Lane strongly encourages its theatre arts students to audition for shows. Public performance is the ultimate test of skill and courage. The 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 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 maintains 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, [lanecc.edu/fec/tour-fitness-education-center](http://lanecc.edu/fec/tour-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 Fitness Education: Introduction. Students and staff may continue to take the course by registering for Fitness Education: Returning. Students satisfy course requirements through attending exercise sessions during usage hours. The class is available for credit or fee-based CRN through Recreational Sports Program. The environment is supportive, not competitive, educational and encourages 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, [lanecc.edu/healthpe/recreation](http://lanecc.edu/healthpe/recreation) 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, [lanetians.com](http://lanetians.com)

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 in the Northwest Athletic Conference (NWAC) with 36 other Idaho, Oregon, Washington, and Canadian colleges. 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.

Women's Sports	Men's Sports
Basketball	Baseball
Cross Country	Basketball
Soccer	Cross Country
Track & Field	Soccer
Volleyball	Track & Field

The administration of the Athletic program is conducted through the Athletics, Fitness & Recreation Division. The director oversees all employees of the Intercollegiate Athletic and Recreational programs. Personnel include the athletic director, head coaches, assistant coaches, athletic trainer, athletic Project specialist, recreation/club sports & special events staff recreation assistants, and student academic coordinator.

## Student Engagement

Main Campus, Office of Student Engagement, Center Building, Room 201 and 202, 541.463.3284, [lanecc.edu/ose](http://lanecc.edu/ose)

The Office of Student Engagement (OSE) encourages students to engage in learning without limits by advancing opportunities that allow for growth and development within and beyond the classroom setting. Through partnerships with several academic and student affairs departments on campus, we promote integrative learning and assist students with connecting to college resources and programs including student activities, student organization development, leadership programming, cultural competency community service, diversity, and multicultural education.

## Student Government

**Associated Students of Lane Community College (ASLCCSG)**

Main Campus, Building 1, Room 201, 541.463.3171, [lanecc.edu/aslcc](http://lanecc.edu/aslcc)

The Associated Students of Lane Community College (ASLCC) is the student body at the Lane Community College Main Campus. All credit students at the main campus who are currently enrolled and have paid the mandatory student activity fee are members the ASLCC. The Associated Students of Lane Community College Student Government (ASLCCSG) is an organization of elected and appointed students who represent the student body (ASLCC). Yearly, elections are held to choose who will represent ASLCCSG members in student government. The elected positions in student government are the President, Vice President, and 10 Senators-at-large.

\* This fee is subject to change pending the Student Activity Fee Recommendations (SAFC) to the President and Board of Education.

## Student Government Programs

**The Rainy Day Food Pantry**, Center Building Basement, Room 006, is a student-run, student led on-campus pantry providing the students of Lane Community College with nutritious food and personal hygiene products.

**Snack Shack**, Building 1, Second Floor. This is a student run, student led convenience store offering snacks and beverages to the students of Lane Community College

**The Stash**, located in Center Building Basement, Room 006, is a non-profit, free thrift store for current, registered students of Lane Community College.

## Council of Clubs

Main Campus, Center Building, Room 201, [lanecc.edu/ose/council-clubs](http://lanecc.edu/ose/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 clubs activities on campus, provide support for clubs, and to encourage an active club presence on campus. For more information on currently active clubs, go to [lanecc.campuslabs.com/engage](http://lanecc.campuslabs.com/engage)

## Student Identity Unions

**Asian Pacific Islander Student Union**

Main Campus, Building 1, Room 210, 541.463.3245

The Asian Pacific Islander Student Union (APISU) mission is to offer a space for Asian and Pacific Islander students at Lane Community College (LCC) 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

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.

**Native American Student Association**

Main Campus, Building 1, Room 210 & Longhouse, 541.463.5238

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 the 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.

**Movimiento Estudiantil Chicano de Azatlan (MEChA)**

Main Campus, Building 1, Room 210, 541.463.5144

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.

**Gender & Sexuality Alliance**

Main Campus, Building 1, Room 202H, 541.463.3253

The Gender & Sexuality Alliance is a student-run organization dedicated to providing a safe and nurturing environment for LGBTQA people and their Straight Allies to come together and express themselves, while working toward bettering their community and combating homophobia.

## Phi Theta Kappa Honor Society

541.463.5142, [lanecc.edu/ptk](http://lanecc.edu/ptk)

Phi Theta Kappa is the international honors society for students enrolled in two-year colleges. It originated in 1918 in Mississippi and has over 1,000 chapters which 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 which are payable in several options.

## Student Help Desk (SHeD)

Main Campus, Center Building, 2nd Floor, 541.463.3333, [lanecc.edu/learningcommons/student-help-desk/](http://lanecc.edu/learningcommons/student-help-desk/); live online chat and online knowledgebase at [help.lanecc.edu](http://help.lanecc.edu) or email [shed@lanecc.edu](mailto:shed@lanecc.edu)

Knowledgeable staff are ready to provide immediate assistance to students with Moodle, myLane, wireless access and other academic technologies. Call, email, drop by, or use the online chat tool. The SHeD is open Monday-Friday, 8 a.m.-5 p.m. The Self-Help Knowledgebase has answers to many commonly asked questions and is 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@lanecc.edu](mailto:shed@lanecc.edu) or visit the Student Help Desk in the library.

## Student Legal Services

Access the Law, 245 W. 13th Avenue, Eugene. 541.686.4890

Legal advice is free and available to all credit students on main campus and is funded through the mandatory student activity fee. An attorney is available 20 hours per week with limited hours during summer term. Appointments may be made through the Access the Law office. Information can be found on campus at the Center For Student Engagement Center Building 201, 541.463.3284

### Student Survivor Legal Services

Main Campus, Building 1, Room 215, 541-346-4666

A free, confidential resource, for Lane Community College students, who have been victims of sexual assault, dating or domestic violence, or stalking. Make an appointment at [ssls.uoregon.edu/](http://ssls.uoregon.edu/)

## Student Publications

**DENALI Literary Arts Magazine**, Center Building, Room 024, 541.463.5897, [lanecc.edu/lc/denali](http://lanecc.edu/lc/denali)

DENALI is a publication of Lane Community College. We publish annually in Spring term. Denali accepts original submissions from Lane County residents and LCC students at any time. 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@lanecc.edu](mailto:denali@lanecc.edu).

**Torch**, Center Building, Room 008, 541.463.5654, [lanecc.edu/mediaarts/torch](http://lanecc.edu/mediaarts/torch)

The Torch is an award-winning, student-produced, weekly campus newspaper with an average circulation of 2,200 copies. Published by authority of 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](mailto:editor@lcctorch.com), 541.463.5655, or Charlie Deitz, news and editorial advisor, at 541.463.5654.

## Sustainability

Lane offers a variety of degrees and courses that include sustainability issues and practices. For more information, see the Sustainability website at [lanecc.edu/sustainability](http://lanecc.edu/sustainability).

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 Chemistry Club, contact: Science Department or faculty advisor John Thompson at 541.463.5199 or [thompsonj@lanecc.edu](mailto:thompsonj@lanecc.edu)
- Learning Garden Club, contact: Learning Garden Specialist at 541.463.5899 or [learninggarden@lanecc.edu](mailto:learninggarden@lanecc.edu)
- Oregon Student Public Interest Research Group, contact: 541.463.5166 or [ospirg@lanecc.edu](mailto:ospirg@lanecc.edu)

## Testing Office

Main Campus, Building 1, Room 116, 541.463.5324, [lanecc.edu/testing](http://lanecc.edu/testing) or email [testingoffice@lanecc.edu](mailto:testingoffice@lanecc.edu)

For current information about Testing Service office hours, fees, to make an appointment and other details, please visit the website.

The Lane Community College Testing Office is committed to providing professional testing services to the school and community. The LCC Testing Office follows the National College Test Association (NCTA) Professional Standards and Guidelines. The college staff use tests as one of several counseling/advising tools, not merely as a record of performance. We provide all students an opportunity to discuss their test results with a counselor/advisor who will assist them in exploring the meaning and implications of their test results.

Students who wish to take vocational interest surveys and personality inventories need to see a counselor to determine if a test is desirable and to get a referral.

## 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. Students may also purchase clothing, gifts and school supplies.

## TRiO Programs

**TRiO**, Main Campus, Building 1, Room 219, 541.463.3131, [lanecc.edu/trio](http://lanecc.edu/trio)

**TRiO STEM (Science/Technology/Engineering/Math)**, Main Campus, Building 1, Room 218, 541.463.3138, [lanecc.edu/trio](http://lanecc.edu/trio)

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 serves any eligible non-STEM students and TRiO STEM who work 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.

For more information: [lanecc.edu/trio](http://lanecc.edu/trio)

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 LCC.

Eligible students must also:

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

## Tutoring Services

[lanecc.edu/tutor](http://lanecc.edu/tutor)

Academic and Tutoring Services coordinates free in-person and online academic coaching in many subject areas with the goal of developing students' strategic learning behaviors and habits. All services are free to currently enrolled Lane students. ATS provides:

- one-on-one academic coaching for many subject areas,
- group-oriented and course-embedded support,
- and the Early Outreach and Referral staff who are trained as resource specialists and content specialists who can provide academic coaching in specific subjects--plus connect you with campus and community support.

To find more information about Lane's full range of options and academic support centers, go to [lanecc.edu/tutor](http://lanecc.edu/tutor).

## Veterans Benefits and Certification

Building 1, First Floor Lobby

**VA Educational Benefits** Building 1, (Lobby), 541-463-5663, [lanecc.edu/esfs/veterans-education-certification-information](http://lanecc.edu/esfs/veterans-education-certification-information) or email [VAEdBenefits@lanecc.edu](mailto:VAEdBenefits@lanecc.edu)

Programs at Lane Community College are approved by the Oregon Department of Education, State Approving Agency and the VA as a qualified training institution for students eligible for VA education benefits. All applications for VA educational benefits and enrollment certifications are processed through the VA Regional Office in Muskogee, OK; 1-888-442-4551 or [gibill.va.gov](http://gibill.va.gov).



**Eligibility Rules** VA Education Benefits are complex and students may have choices to make to determine which benefit chapter they wish to utilize. All who qualify for benefits need to submit an application to the VA through [va.gov](http://va.gov). Students may qualify for more than one VA Benefit Chapter but can only be certified for one at a time. For more information, contact VA Educational Benefits at [VAEdBenefits@lanec.edu](mailto: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 pro-rated 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 educational benefits must be enrolled in an approved degree or certificate program and only courses applicable toward the degree or certificate and their prerequisites can be certified for VA payment.

**Academic Progress Standards** Academic Progress Standards are listed in this catalog and are provided to new students upon initial establishment of your VA file at Lane.

**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 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 for VA purposes. If a student takes a course that does not fulfill a program requirement, it cannot be certified with the VA. Excessive electives, for example, that are not needed to fulfill a student's program requirements, cannot be certified with the VA. Payment of tuition and fees for courses that do not meet VA applicability rules are the student's responsibility. In order for prerequisites to be certified with the VA for major requirements in math, English, and writing, testing results from Testing Services must indicate they are necessary. Students needing remedial courses (below 100 level) must enroll in the in-class 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 with the VA are the student's responsibility.

**Program Changes** Students utilizing VA benefits must keep their program of pursuit current with the Veterans Benefits Office and on their Lane account. Students are not be certified until discrepancies of a declared program are resolved. The program declared is reported to the VA every term.

**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 successfully complete all classes for credit to avoid 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. VA certifications are not be processed without a term planner. The term planner must be signed by Academic Advising. To ensure course applicability and compliance with VA regulations, each term before classes are certified, the student's registered classes will be compared to the program planner. 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 received in the Veterans Benefits Office no later than 45 days before the term starts to ensure time for processing. Submission later than 45 days prior may result in delayed receipt of VA benefits. Changes to a previously submitted term planner will require either a new planner to be submitted or an email from your advisor confirming the course is applicable to your program.

**Certification** New students are required to complete the intake document packet with the Veterans Benefits Office to establish your VA file at Lane. These documents must be completed before we can process a certification to the VA. This initial establishment of your file includes providing official transcripts from prior schools to determine if credit has been earned, and submitting a VA certificate of eligibility (or equivalent from eBenefits).

Certification for a term occurs after the student has registered and submitted a term planner. A new term planner is required every term. Certification can occur up to 120 days before the term begins. Our standard is to process all VA certifications within 30 days of the term starting. Students will receive an email from the VA at the time their certification is processed. This will be sent to your

[my.lanec.edu](mailto:my.lanec.edu) email account. Students should review the certification email and notify the Veterans Benefits Office if a discrepancy is identified. Initially credits only are reported to the VA. After the first week of the term, tuition and fees are reported. Students using CH 33 benefits should see the VA funds credited to their Lane account approximately 2 - 4 weeks after the term has started.

**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 Veteran's 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 they 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 funds until their Lane account is paid in full.

Unforeseen circumstances may occur which could delay when the VA payment is received. Students should also monitor their eBenefits account to see when VA payments are scheduled for deposit to their personal bank account.

**Flight Technology** An addendum to the Lane Course Catalog is the Flight Technology Information Bulletin, or FTIB, which details current flight training costs (hourly aircraft rental and instructional rates, etc.). This addendum will be provided to the veteran student upon first contact with the Flight Technology Office.

**Prior Credits (Transcripts)** Students applying for VA benefits at Lane who have received college credits at other schools, using VA benefits or not, must provide official transcripts to Lane before their first certification is processed to the VA. Joint Services Transcripts (JST) will be requested by Lane personnel. Air Force veterans will need to request their military transcript from the Community College of the Air Force. These transcripts ensure all prior awarded credit is applied toward the student's program at Lane and that passed courses are not repeated. Students' past enrollments may also be checked with the National Student Clearinghouse.

**Lane Email** Communication with VA students by email is done through the student's [my.lanec.edu](mailto:my.lanec.edu) email account. Students should periodically view their school email to ensure they do not miss important communication related to your VA benefits. Email can be accessed through myLane.

**Basic Choice Act** A student is entitled to pay tuition and fees at Lane Community College at the rates provided for Oregon residents without regard to the length of time the person has resided in this state if the student resides in this state while enrolled in the institution and the student is:

A Veteran using educational assistance under either chapter 30 (Montgomery G.I. Bill® – Active Duty Program) or chapter 33 (Post-9/11 G.I. Bill®), of title 38, United States Code, who lives in Oregon while attending a school located in Oregon (regardless of his/her formal State of residence) and enrolls in the school within three years of discharge or release from a period of active duty service of 90 days or more.

Anyone using transferred Post-9/11 GI Bill® benefits (38 U.S.C. § 3319) who lives in Oregon while attending a school located in Oregon (regardless of his/her formal State of residence) and enrolls in the school within three years of the transferor's discharge or release from a period of active duty service of 90 days or more.

Anyone described above while he or she remains continuously enrolled (other than during regularly scheduled breaks between courses, semesters, or terms) at the same school. The person so described must have enrolled in the school prior to the expiration of the three year period following discharge or release as described above and must be using educational benefits under either chapter 30 or chapter 33, of title 38, United States Code. •

Anyone using benefits under the Marine Gunnery Sergeant John David Fry Scholarship (38 U.S.C. § 3311(b)(9)) who lives in Oregon while attending a school located in Oregon (regardless of his/her formal State of residence).

Anyone using transferred Post-9/11 G.I. Bill® benefits (38 U.S.C. § 3319) who lives in Oregon while attending a school located in Oregon (regardless of his/her formal state of residence) and the transferor is a member of the uniformed service who is serving on active duty.

# 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's degree or a certificate, students must meet the requirements in the catalog that is current when they declare their Program of Study at LCC, 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 LCC credit each academic year lose the right to meet the requirements of their original catalog. They must then meet requirements of the current catalog at the time they resume work on their degree or certificate at LCC, or a later catalog. Reverse transfer students may graduate using their original catalog, if 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 effected, 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 available online in myGradPlan, in academic departments, as well as in program advisors' offices. In the event that a specific AAS program degree, AAS program option, or certificate of completion is suspended or deleted, the requirements for that program must be fulfilled within timeframe in the written 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 these prescribed credit programs: Degrees and certificates with an\* are career technical programs. The title of the career technical 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 effected, but who qualifies for the immediately previous catalog, may petition to graduate under the new requirements and will be awarded 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 may have additional limitations or requirements. Please see individual programs for requirement information.

- Total Credits Complete the number of credits as required for the individual degree, including foundational skills and discipline studies 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.
- Grade Point Average Earn a minimum cumulative GPA of 2.00 at Lane.
- Pass/No Pass Students may select P/NP option for up to 16 credits toward a degree/certificate, unless limited by specific 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 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 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 myLane.

## 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 course work from U.S. colleges and universities that are regionally 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 (formerly the North Central Association of Colleges and Schools) 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 postsecondary 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. Courses may transfer even if Lane does not offer an identical course. Not all transfer course work is eligible to meet defined degree or certificate requirements. Under some circumstances, counselors and 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 are only transferable when the issuing institution defines the grade as C- or better.
- Coursework at 300 levels or above is 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 taken.

## International Transfer Credits

Coursework listed on non-U.S. transcripts must be evaluated by an agency on the 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 regionally accredited for a maximum of 25 percent of the degree or certificate. More information is available at [lanec.edu](http://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 PE applicable to all PE/Health degree requirements upon the submission of a DD214 with basic training completion.

## Policies and Procedures

### Definitions

**Academic Requirements Review Committee** The Academic Requirements Review Committee 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 Academic Requirements Review Committee will not accept petitions solely for the purpose of improving a Grade Point Average or other cosmetic reasons. Typically, the Academic Requirements Review Committee 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 Academic Requirements Review Committee include:

- substitutions to requirements for AAOT, AS, or AGS degrees
- waiver of requirements for AAS degrees and certificates

Academic Requirements Review Committee petitions are available online [lanecc.edu/esfs/general-education-substitution-and-waiver-petition](http://lanecc.edu/esfs/general-education-substitution-and-waiver-petition).

**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. See Academic Standards and Alert System.

**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 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 chair/director 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 [lanecc.edu/schedule](http://lanecc.edu/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.

**Transfer Credits** Students are encouraged to use the Transfer Tool ([lanecc.edu/esfs/general-information-transferring-credits](http://lanecc.edu/esfs/general-information-transferring-credits)) 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 course work. 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.

**Miscellaneous Training and Credit** Credit also may be granted for military training as listed on the ACE/AARTS report or work completed at regionally accredited schools. Institutions that are not regionally accredited may be reviewed using the Credit-by-Assessment process.

**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 fulltime 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 Division Dean, students must enroll in a minimum of three credits of co-op per term.

**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 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. Anth 102\_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 [lanecc.edu/honors](http://lanecc.edu/honors).

**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 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 the Career Technical Education Courses course prefixes.

**Noncredit 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 noncredit. Noncredit course offerings are listed and described each term in the class schedule. Under the state's definition, a noncredit course "does not offer college credit for completion and generally cannot be used as part of a credit based degree or certificate program. No assessment of learning generally takes place." Noncredit courses will not be counted for financial aid, and will not transfer to another institution.

**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.

**Credit Hour** Credit granted at Lane is in terms of quarter 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 quarter. For lecture classes, this means ten hours of instruction and twenty hours of preparation on the student's part. For lab classes, thirty hours in the lab are required per credit.

**Classroom Hours** There are 12 classroom hours per lecture (credit) hour, 24 classroom hours per lecture/lab (credit) hour and 36 classroom hours per lab (credit) hour.

**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 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, as well. 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 graduation ceremony may pick up a binder at the Student Life and Leadership office anytime after the graduation ceremony.

**myGrad Plan** Lane students may view their progress toward degree and certification completion in myLane under the myGradPlan tab.

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

**Core Transfer Maps** will be noted on a student's transcript upon completion of the requirements and at the request of the student. More information about Core Transfer Maps can be found at [lanecc.edu/collegecatalog/core-transfer-maps](http://lanecc.edu/collegecatalog/core-transfer-maps).

**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 course work.



**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.

**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 honors students who achieve high academic standards. Honor list requirements are:

**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.

\* Notated on official transcripts

**Hybrid** A course combining traditional classroom activities with online learning so that time spent in the classroom is reduced but not eliminated. Hybrid courses have traditional class sessions, but some classroom hours are replaced by online interactions, assignments and projects. The ratio of classroom activities and online interactions in hybrid courses may vary, but the expectation is that each credit will require approximately 33 hours of student involvement during the quarter, including class time, homework, research projects, studying for exams, online work in hybrid courses, or other out-of-class activities. Hybrid sections of a course are coded with *hyb* in the term schedule and technical requirements for class participation are clearly explained in notes in the schedule.

**"L" Number (User ID)** Lane provides all students with a computer generated "user ID" for myLane. 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 myLane, including registration, account payments, schedules, grades, and financial aid information. Refer to each term's class schedule for information about obtaining an "L" number.

**myLane** Lane Community College students use web registration on myLane. Using the web, students register for classes from any computer connected to the Internet. For information about myLane, visit Lane's website at [lanecc.edu](http://lanecc.edu).

**Program** A Career Technical program is state approved curriculum arranged to provide career technical training leading toward an Associate of Applied Science degree or certificate of completion. The courses required for each program are listed under Programs in this catalog.

**Student Grades** Students access term grades through myLane. 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 from myLane 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/esfs/transcripts](http://lanecc.edu/esfs/transcripts).

**Term** A term, or quarter, is approximately an eleven-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.

## Procedures

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

**Schedule Changes** Students may change their schedule after their original registration by using myLane. 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, students are encouraged to drop the classes using myLane before the refund deadline. After week one, students can withdraw from a course using myLane by midnight Friday of the eighth week of a full-term class.

**No Show Drop** Students will be administratively dropped for nonattendance 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 [lanecc.edu/esfs/noshow-drops](http://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 myLane. 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 myLane functions.

**Students who apply for financial aid must supply their social security number on the Free Application for Federal Student Aid (FAFSA).** For web access on myLane, 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 myLane 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 [studentclearinghouse.org](http://studentclearinghouse.org).

**Release of Records** In accord with Federal Law (The Family Education Rights and Privacy Act, Public Law 93-380) "FERPA", 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 she or he considers 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 a federal privacy law, called 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 myLane. Completing this process will place a confidential block indicator on your records at lane. 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 myLane 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 can not 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 which 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](http://studentclearinghouse.org). The current fee is \$7.25 - \$8.25 through the National Student Clearinghouse, depending on delivery method. See Lane's website for current fees: [lanecc.edu/esfs/transcripts](http://lanecc.edu/esfs/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 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 must submit the online transcript evaluation form at [lanecc.edu/esfs/request-transcript-evaluation](http://lanecc.edu/esfs/request-transcript-evaluation).

**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 myLane. Unofficial transcripts also may be printed from myLane.

**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 class the 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)
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. Example:

	credits	grade	points
BA 226 - Business Law	3	A	12
PE 170 - Beginning Tennis	1	B	3
EL 115 - Effective Learning	3*	P	0*
FE - 207 Coop Ed	2	C+	4.60
Total GPA Credit	6	TOTAL POINTS	19.60
19.60 ÷ 6 = 3.266 GPA			

\* Points are not included in calculation, because of P grade. Total credits earned in this example are nine.

**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.

**Academic Progress Standards and Alert System** 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) [lanecc.edu/finaid/satisfactory-academic-progress](http://lanecc.edu/finaid/satisfactory-academic-progress) and apply to all students.

**Academic Progress Standards (APS)** Academic Progress Standards are based on academic performance for each term. Students are required to attain a minimum GPA of 2.0 and complete at least 67% of attempted credits each term.

**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 [lanecc.edu/esfs/refund-drop-schedulechange-deadline-information](http://lanecc.edu/esfs/refund-drop-schedulechange-deadline-information) for details.

Term	GPA	Completion Rate	Academic Standing	Intervention
1st	Less than 2.0	Less than 67%	Alert 1	Requires completion of Keys to Success Workshop (online) accessed on your Moodle page
2nd	Less than 2.0	Less than 67%	Alert 2	Requires Keys to Success Workshop (in-person) <a href="http://lanecc.edu/cc/alert-2-keyssuccess-person-workshop">lanecc.edu/cc/alert-2-keyssuccess-person-workshop</a>
3rd	Less than 2.0	Less than 67%	Alert 3	Requires enrollment in College Success: Back On Course (1 credit) <a href="http://lanecc.edu/cc/alert-3-back-course">lanecc.edu/cc/alert-3-back-course</a>
4th	Less than 2.0	Less than 67%	Dismissal	Requires out for two terms a completed petition to return <a href="http://lanecc.edu/cc/alert-4-academic-dismissal">lanecc.edu/cc/alert-4-academic-dismissal</a>

**Petitions to return to Lane** Students who do not meet the Academic Progress Standards for a fourth term will be dismissed from college credit classes and programs for a minimum of two academic terms. To be reinstated, students will submit a completed Petition to Return to Lane available at the Alert 4 Information Session and on the Alert 4/Dismissal Moodle site. Petitions must be turned in a minimum of six weeks prior to the beginning of the academic term the student wants to return.

**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 myLane 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 an attempted credit.

**Request for Incomplete** An Incomplete can be provided when a student has satisfactorily completed 75 percent or more of the course work 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 [lanecc.edu/esfs/request-absolve-repeated-courses](http://lanecc.edu/esfs/request-absolve-repeated-courses). 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.

## 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:

- The institution represents itself accurately and consistently to prospective students through its catalogs, publications and official statements.
- Admissions information forms avoid eliciting information for which there is no clear necessity.
- Methods of collecting, reviewing, transmitting, or storing information about learners will be protected against improper access in compliance with federal and state regulations.
- Facilities provide a reasonable level of privacy, both visual and aural.
- The college environment is welcoming and accepting to all learners.
- Learners have a clear understanding of what may be expected from the services offered.
- Learners are informed of their rights and responsibilities and are provided a process to address grievances.
- 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 affects employment or educational opportunities, or that creates an intimidating, hostile, or offensive environment for one of the parties. ([lanecc.edu/copp/docs/documents/harassment-sexual-general](http://lanecc.edu/copp/docs/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](http://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:

- Alcoholic Beverages may be used/served:
- 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
- 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).
- 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.
- 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

[lanecc.edu/copps/documents/student-complaint-procedure](http://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. [See chart on page 21]

### 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](mailto: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.

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.
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.

## Substance Abuse

Please contact the Lane Community College Counseling Center at [lanecc.edu/cc/contact-us](mailto:lanecc.edu/cc/contact-us).

## 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 which 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 indistrict 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 operation. 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 the college in a timely manner. The college's policies regarding 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 acquire 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 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 at [lanecc.edu/copps/documents/student-complaint-procedure](http://lanecc.edu/copps/documents/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.

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 at [lanecc.edu/copps/documents/student-organizations-guidelines](http://lanecc.edu/copps/documents/student-organizations-guidelines).

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.

Non-discrimination policies - Student organizations must abide by existing college and ASLCC policies and may not restrict membership or participation in events.

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 and 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 also Facilities: Use in General at [lanecc.edu/copps/documents/facilities-use-general](http://lanecc.edu/copps/documents/facilities-use-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 at [lanecc.edu/copps/documents/distribution-literature](http://lanecc.edu/copps/documents/distribution-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

The Student Code of Conduct ([lanec.edu/sites/default/files/copps/code\\_of\\_conduct.pdf](http://lanec.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 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 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 [lanec.edu/psd/clery-compliance-information](http://lanec.edu/psd/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 the Downtown Center. 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 7 days a week. In order 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 and may cite or arrest perpetrators of criminal acts or college policy violations. In addition, officers utilize law enforcement tools such as the Criminal Justice Information System, Law Enforcement Data System (LEDS).

## 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, selfdefense, 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, motorized T-3, 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 40 red telephones on main campus and at the Downtown 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 periodically 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 13, Room 107 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 13, Room 107. 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 Women's Center, the Title IX officer, Academic and Student Affairs, Veterans Resource Office, Human Resources, the Center for Accessibility Resources, and the Counseling Department.

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

Public Safety is also the primary facilitator and supporter of a campus warming center. This center provides shelter and meals for any individual when the temperature drops to 30 degrees F or lower.

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 web site: [lanec.edu/psd/clery-compliance-information](http://lanec.edu/psd/clery-compliance-information).

For more information about Lane's Public Safety Department, contact 541.463.5558.

## Degrees and Certificates

Degree and certificate programs offered at Lane, including Associate degrees, Certificates of Completion, and Career Pathway Certificates of Completion.

### 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.

NOTE: Each student is strongly encouraged to work with an academic advisor or counselor 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

### Learning Outcomes

Lane degrees and certificates are aligned with Lane's Core Learning Outcomes and Oregon learning outcomes.

### Guidelines

- Complete a total of 90 credits of college-level coursework (see notes).
- Complete at least 24 credits at Lane.
- 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.
- All Elective courses may be any number of credits.
- All courses must be passed with a grade of "C-" or better, or Pass.
- Maximum 16 credits "P" 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 when 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

In addition to courses used for Foundational Skills, students must select additional courses in the areas identified below. Not all courses are taught every term.

#### 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 an (\*) 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/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.

Computer programming languages: Computer Science courses are not repeatable. Students taking their first programming language (C++, .NET, or Python) will take CS 161 and 162. Because CS 161 and 162 are not repeatable courses, students taking a second programming language must use the CS 133 and 233 course numbers. Please contact the department or your academic advising team 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 Career Technical Education Courses. 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).
- 12 credits of Physical Education activity (PE, PEAT, PEO) may be included within the entire degree.

### Notes

- College-level courses are numbered 100 or higher. Courses numbered 001-099 are considered developmental.

- Foundational Skills are open to demonstration of proficiency. Waiver testing is not the same as placement testing. Students should contact the appropriate academic department for information.
- Only 200-level foreign language courses count as Arts and Letters.
- University second language admission requirements for transfer students graduating high school in 1997 and thereafter include one of the following:
  - two terms of a college-level second language with an average grade of C- or above, OR
  - two years of the same high school-level second language with an average grade of C- or above, OR
- satisfactory performance on an approved second language assessment of proficiency.
- demonstrated proficiency in American Sign Language meets this second language admission requirement.
- Credit-by-Exam and Credit-by-Assessment may comprise up to 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 apply to more than one Discipline Studies area, but may be used only once toward completing a requirement.
- Lower-division college-level courses (100 and 200-level) taken at Lane might not meet the requirements of an upper-division course with a similar title and content offered by other colleges and universities. In such cases, the courses in question will generally transfer as electives.
- Courses numbered 197, 198, 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 Discipline Studies.

## Associate of Science Oregon Transfer: Business, ASOT-BUS

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 or counselor 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

## Learning Outcomes

Lane degrees and certificates are aligned with Lane's Core Learning Outcomes and Oregon learning outcomes.

## Guidelines

- Complete a total of 90 credits college-level coursework (see notes).
- Complete at least 24 credits at Lane.
- Foundational Skills and Discipline Studies courses must be a minimum of 3 credits.
- All Elective courses may be any number of credits.
- All courses must be passed with a grade of C- or better, or Pass.
- Maximum 16 credits "P" may be used toward degree. This limit does not include courses only offered P/NP.
- Cumulative Lane GPA must be at least 2.0 when 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

Students taking writing classes of three credits each must take WR 121/WR 121\_H, and WR 122/WR 122\_H, and either WR 123 or WR 227. Students taking writing classes of four credits each must take WR 121/WR 121\_H, and WR 122/WR 122\_H or WR 227/WR 227\_H. A student must have eight credits of Writing. Meets the Information Literacy requirement.

### Oral Communications

One course from the Oral Communication list.

### Mathematics

Three courses, MTH 105 - Math in Society and above, one of which must be MTH 243 - Introduction to Probability and Statistics.

### Computer Applications

One computer applications course: CIS 101 - Computer Fundamentals or CS 120 - Concepts of Computing: Information Processing.

### Discipline Studies

In addition to courses used for Foundational Skills, students must select additional courses in the areas identified below.

### Cultural Literacy

One course from any Discipline Studies list designated as meeting the statewide criteria for cultural literacy. Courses approved for the Cultural Literacy requirement are marked with an (\*) on the following lists. The credits for such courses will be counted only once toward the 90 credits required to complete the degree.

### Arts and Letters

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

### Social Sciences

Four courses from two or more disciplines from the Social Science list, with a minimum of two courses in "principles of economics" (to include microeconomics and macroeconomics) at the 200 level.

### Science/Math/Computer Science

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.

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.

### Business-Specific Requirements

Minimum of 20 credits of Business-specific courses.

- BA 101 - Introduction to Business 4 Credit(s)
- BA 211 - Financial Accounting 4 Credit(s)
- BA 213 - Managerial Accounting 4 Credit(s)

Choose two of the following (8 credits):

- 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 281 - Personal Finance 4 Credit(s)

NOTE: Other courses may be considered on a case-by-case basis. See Business Department for help.

## Electives

Lower-division collegiate courses needed to bring total credits to 90.

Limitations include:

- Up to 18 credits of Cooperative Education may be included as electives. See Cooperative Education/Internships in the course descriptions.
- Up to 12 credits of Individual Music Lessons (MUP) may be included as electives.
- Up to 12 credits of Physical Education activity may be included within the entire degree (Electives and Health/Wellness Fitness).
- WR 115 may be included in the degree as an elective if completed summer 1999 or later.
- Up to 12 credits of Career Technical Education. See the list of Career Technical Education Courses. Policies on accepting Career Technical credits vary at the four-year institutions in Oregon. Consult an academic advisor about taking Career Technical courses as Electives.

University-specific prerequisites: Consult Lane's Academic Advising department for a list of university-specific prerequisites and recommended coursework. Prerequisites and recommendations of specific institutions may change without notice.



## Notes

- **University-specific prerequisites:** Consult Lane's Academic Advising department for a list of university-specific prerequisites and recommended coursework. Please note: Prerequisites and recommendations of specific institutions may change without notice.
- 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 considered developmental.
- Foundational Skills are open to demonstration of proficiency. For information on waiver testing or credit for prior learning, contact a counselor or academic advisor. Waiver testing is not the same as placement testing.
- Second year foreign language courses, but not first year, may be included among courses that count toward the Arts and Letters requirement. American Sign Language (ASL) is considered a foreign language.
- University second language admission requirements for transfer students graduating high school in 1997 and thereafter include one of the following:
  - two terms of a college-level second language with an average grade of C- or above, OR
  - two years of the same high school-level second language with an average grade of C- or above, OR
  - satisfactory performance on an approved second language assessment of proficiency.
  - demonstrated proficiency in American Sign Language meets this second language admission requirement.
- Credit-by-Exam and Credit-by-Assessment may comprise up to 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.
- Lower-division college-level courses (100 and 200-level) taken at Lane may not meet the requirements of an upper-division course with a similar title and content offered by public universities in Oregon. In such cases, the courses in question will normally transfer as electives.
- Courses numbered 197, 198, 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 Discipline Studies.
- Students who intend to transfer to Oregon State University should take CIS 101, not CS 120. OSU transfers Lane's CIS 101 + BA 101 as OSU's BA101.
- 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.

## Associate of Science Oregon Transfer: Computer Science, ASOT-CS

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 or counselor 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

## Learning Outcomes

Lane degrees and certificates are aligned with Lane's Core Learning Outcomes and Oregon learning outcomes.

## Guidelines

- Complete a total of 90 credits of college-level coursework (see notes).
- Complete at least 24 credits at Lane.
- 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.
- All Elective courses may be any number of credits.
- All courses must be completed with a letter grade of C- or better, or Pass, except the following courses, which must be completed for a letter grade of C or better. P/NP will not be accepted.
  - CS 160 - Orientation to Computer Science
  - CS 161: Computer Science 1
  - CS 162: Computer Science 2
  - CS 260 - Data Structures 1
- Maximum 16 credits of "P" may be used toward this degree. This limit does not include courses only offered P/NP.
- Cumulative Lane GPA must be at least 2.0 when the Associate of Science Oregon Transfer: Computer Science degree is awarded.

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

### Foundational Skills

#### Writing

Students taking writing classes of three credits each must take WR 121/WR 121\_H, and WR 122/WR 122\_H, and either WR 123 or WR 227. Students taking writing classes of four credits each must take WR 121/WR 121\_H, and WR 122/WR 122\_H or WR 227. A student must have eight credits of Writing. Meets the Information Literacy requirement.

WR 227/WR 227\_H will meet additional requirements at some CS baccalaureate programs.

#### Oral Communication

One course from the Oral Communication list.

#### Mathematics

Two courses: MTH 251 - Calculus 1 (Differential Calculus) and MTH 252 - Calculus 2 (Integral Calculus).

#### Health/Wellness/Fitness

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

#### Discipline Studies

##### Cultural Literacy

One course from any Discipline Studies list designated as meeting the statewide criteria for cultural literacy. Courses approved for the Cultural Literacy requirement are marked with an (\*) on the following lists. The credits for such courses will be counted only once toward the 90 credits required to complete the degree.

##### Arts and Letters

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

##### Social Sciences

Four courses from two or more disciplines from the Social Science list.

##### Science/Math/Computer Science

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

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. Some transfer programs require physics. Contact your academic advisor for help selecting appropriate transfer courses.

### Computer Science Specific Requirements

A minimum of sixteen credits in Computer Science consisting of the following courses, which 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

CS 162 - Computer Science 2

CS 260 - Data Structures 1 4 Credit(s)

## 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 Career Technical Education Courses. 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).
- 12 credits of Physical Education activity (PE, PEAT, PEO) may be included within the entire degree.

University-specific prerequisites: Consult Lane's Academic Advising department for a list of university-specific prerequisites and recommended coursework. Prerequisites and recommendations of specific institutions may change without notice.

## 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 considered developmental.
- Foundational Skills are open to demonstration of proficiency. For information on waiver testing or credit for prior learning, contact a counselor or academic advisor. Waiver testing is not the same as placement testing.
- Second year foreign language courses, but not first year, may be included among courses that count toward the Arts and Letters requirement. American Sign Language (ASL) is considered a foreign language.
- University second language admission requirements for transfer students graduating high school in 1997 and thereafter include one of the following:
  - two terms of a college-level second language with an average grade of C- or above, OR
  - two years of the same high school-level second language with an average grade of C- or above, OR
  - satisfactory performance on an approved second language assessment of proficiency.
- demonstrated proficiency in American Sign Language meets this second language admission requirement.
- Credit-by-Exam and Credit-by-Assessment may comprise up to 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.
- Lower-division college-level courses (100 and 200-level) taken at Lane may not meet the requirements of an upper-division course with a similar title and content offered by public universities in Oregon. In such cases, the courses in question will normally transfer as electives.
- Courses numbered 197, 198, 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 Discipline Studies.
- Although the ASOT-CS provides an excellent structure for many students intending on pursuing a computer science four year degree, it is not ideal for everyone. Students should consult closely with a computer science advisor.

## 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.

## 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 Core Learning Outcomes.

## Degree Requirements

To earn the AGS degree, students must meet the following criteria:

- Complete a minimum of 90 credits.
- Complete a minimum of 24 credits at Lane.
- Pass all General Education: Foundational courses with a grade of C- or P or better.
- Pass all General Education: Discipline Studies and Elective courses with a grade of D- or P or better.
- Maximum 16 credits P 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 General Studies degree is awarded.

## General Education: Foundational (11 credits)

Foundational courses must be a minimum of 3 credits each, except for Health/Wellness/Fitness courses, which may be any number of credits. Courses used to meet Foundational requirements for this degree must be 100-level or higher, with the exception of Math.

## Writing

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

## Mathematics

MTH 052 satisfies this degree requirement but does not meet college-level requirements. Students who use developmental math to meet this requirement will still 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

Three (3) credits, any combination of courses from the approved Health/Wellness/Fitness list.

## General Education: Discipline Studies (16 credits)

Complete 16 credits of Discipline Studies requirements, including one course from each discipline area. Additional courses to meet 16 credits may be selected from any discipline area. Courses used to meet this requirement must be a minimum of three (3) credits each and must be 100-level or higher.

## Arts and Letters

One course from the approved Arts and Letters list.

## Social Science

One course from the approved Social Science list.

## Science/Math/Computer Science

One course, selected from either of the following list:

Science/Math/Computer Science

Only MTH 105 or higher may be used to meet this requirement.

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.

## General Education Choice

Select additional course(s) to meet 16 credits from any of the following approved course lists.

Arts and Letters

Social Science

Science/Math/Computer Science

## Electives (63 credits)

Complete additional coursework to meet 90 credits. Courses selected 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.
- Up to 12 credits of Individual Music Lessons (MUP).
- Up to 12 credits of Physical Education and/or Dance activity may be included within the entire degree.
- Any number of Career Technical courses. Consult an academic advisor about taking Career Technical Education courses to meet this degree requirements, as policies on accepting Career Technical credits vary at other colleges and universities.

## Notes

University second language admission requirements for transfer students graduating high school in 1997 and thereafter include one of the following:

- two terms of a college-level second language with an average grade of C- or above, OR
- two years of the same high school-level second language with an average grade of C- or above, OR
- satisfactory performance on an approved second language assessment of proficiency.
- demonstrated proficiency in American Sign Language meets this second language admission requirement.
- Credit-by-Exam and Credit-by-Assessment may comprise up to 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.
- Lower-division college-level courses (100- and 200-level) taken at Lane might not meet the requirements of an upper-division course with a similar title and content offered by other colleges and universities. In such cases, the courses in question will generally transfer as electives.
- Courses numbered 199, 280, 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 for Discipline Studies.

## 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 a counselor or 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

- All courses must be passed with a letter grade of C- or better. P/NP is not accepted.
- Courses selected must be a minimum of 3 credits.
- Students must have a minimum cumulative GPA of 2.0 at the time the module is posted
- To receive an Oregon Transfer Module notation on their transcript, students must complete all requirements in the Foundational and Discipline Studies areas listed below. Students must also complete enough electives coursework to total 45 credits. Elective courses must be chosen from the approved Discipline Studies (Arts & Letters, Social Science, or Science/Math/Computer Science) options.
- Developmental Courses (below 100-level) are designed to prepare students for college transfer courses are not applicable to the Oregon Transfer Module.

### Foundational Skills

Foundational Skills are open to demonstration of proficiency. For information on waiver testing or credit for prior learning, contact an advisor.

### Writing

Two courses of college-level composition (WR 121/WR 121\_H and WR 122/WR 122\_H, WR 123, or WR 227/WR 227\_H)

### Oral Communications

One course from the Oral Communication list

### Mathematics

One course in college-level mathematics, MTH 105 - Math in Society, or higher.

### Discipline Studies

Courses selected must be a minimum of 3 credits each and must be selected from Approved Discipline Studies Courses for Associate Degrees and Oregon Transfer Module.

## Arts and Letters

Three courses from approved Arts and Letters list

### Social Sciences

Three courses from approved Social Science list

### Science/Math/Computer Science

Three courses from the approved Science/Math/Computer Science lists, including at least one biological or physical science with a lab.

## Approved Discipline Studies Courses for Associate Degrees and Oregon Transfer Module (AAOT, ASOT, AGS, OTM)

These lists apply to all associate-level degrees except for the Associate of Science, AS degree. The courses on the following lists are approved for these degree and transfer programs:

- \*Associate of Applied Science (AAS)
- Associate of Arts Oregon Transfer, AAOT
- Associate of General Studies, AGS
- Associate of Science Oregon Transfer: Business, ASOT-BUS
- Associate of Science Oregon Transfer: Computer Science, ASOT-CS
- 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.

## General Education: Discipline Studies Course Lists

These lists are not approved for the Associate of Science, AS degree. See the AS degree requirements for specific courses that meet General Education: Discipline Studies requirements for that award.

**Note about Cultural Literacy:** Courses approved for the Cultural Literacy requirement are marked with an (\*) 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.

### Oral Communications

- Comm 100 - Basic Communication 4 Credit(s)
- Comm 111 - Fundamentals of Public Speaking 4 Credit(s)
- Comm 111\_H - Fundamentals of Public Speaking-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)

## ARTS AND LETTERS

Courses marked with an asterisk (\*) 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: Intermediate Traditional and Digital Etching 3 Credit(s)



ART 274 - Printmaking: Intermediate 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) \*  
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) \*  
ARH 208 - History of Chinese Art 3 Credit(s) \*  
ARH 209 - History of Japanese Art 3 Credit(s) \*  
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) \*  
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) \*  
CW 202 - Chinuk Wawa 4 Credit(s) \*  
CW 203 - Chinuk Wawa 4 Credit(s) \*

## 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 the 1960s 4 Credit(s)  
CINE 267 - Film History 3-1960s-the present 4 Credit(s)

## Communications

COMM 100 - Basic Communications 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 112 - Persuasive Speech 4 Credit(s)  
COMM 115 - Introduction to Intercultural Communication 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 220 - Communication, Gender and Culture 4 Credit(s) \*  
COMM 265 - Environmental Communication 4 Credit(s)  
COMM 285 - Mediated Communication 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) \*  
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 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) \*  
ENG 109 - Survey of World Literature 4 Credit(s) \*  
ENG 151 - Black American Literature 4 Credit(s) \*  
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) \*  
ENG 217 - Reading, Writing and Digital Culture 4 Credit(s)  
ENG 222 - Literature and Gender 4 Credit(s) \*  
ENG 232 - Native American Literature, Myth and Folklore 4 Credit(s) \*  
ENG 240 - Nature Literature 4 Credit(s)  
ENG 243 - Native American Autobiography 4 Credit(s) \*  
ENG 244 - Asian American Literature 4 Credit(s) \*  
ENG 250 - Introduction to Folklore and Mythology 4 Credit(s) \*  
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 and Non-Fiction 4 Credit(s) \*  
ENG 260 - Introduction to Women Writers 4 Credit(s) \*  
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) \*

## Film Arts

FA 255 - Understanding Movies: American Cinema 3 Credit(s)  
FA 264 - Women Make Movies 4 Credit(s) \*  
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) \*

## 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) \*

## 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 1 3 Credit(s) \*  
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: Introduction 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) \*  
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) \*

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)

## 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) \*  
TA 272\_H - Introduction to Theatre-Honors 4 Credit(s) \*

## SOCIAL SCIENCE

Courses marked with an asterisk (\*) are approved to meet the Cultural Literacy requirement.

## Anthropology

ANTH 101 - Physical Anthropology 4 Credit(s)  
ANTH 102 - World Archaeology 4 Credit(s) \*  
ANTH 102\_H - World Archaeology-Honors 4 Credit(s) \*  
ANTH 103 - Cultural Anthropology 4 Credit(s) \*  
ANTH 227 - Prehistory of Mexico 4 Credit(s) \*  
ANTH 228 - Chicano Cultures 4 Credit(s) \*  
ANTH 231 - American Indian Studies 3 Credit(s) \*  
ANTH 232 - American Indian Studies 3 Credit(s) \*  
ANTH 233 - American Indian Studies 3 Credit(s) \*

## 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: 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)  
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 200 - Foundations of Education Seminar 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) \*  
ED 269 - Inclusion and Special Needs 3 Credit(s)

## Ethnic Studies

ES 101 - Historical Racial and Ethnic Issues 4 Credit(s) \*  
ES 102 - Contemporary Racial and Ethnic Issues 4 Credit(s) \*  
ES 212 - Chicano/Latino Studies: Political and Ideological Perspectives 4 Credit(s) \*

ES 213 - Chicano/Latino Studies: Contemporary Identity and Cultural Issues 4 Credit(s) \*  
ES 221 - African American Studies: Down from the Pyramids, Up from Slavery 4 Credit(s) \*  
ES 223 - African American Studies: A Luta Continua: The Struggle Continues 4 Credit(s) \*  
ES 241 - Native American Studies: Consequences of Native American and European Contact 4 Credit(s) \*  
ES 243 - Native American Studies: Contemporary Indigenous Issues 4 Credit(s) \*  
ES 244 - Native American Leadership 1: Building Leadership Through Indigenous Oratory 4 Credit(s) \*

## Geography / Geographic Information Science

GEOG 141 - Natural Environment 4 Credit(s)  
GEOG 142 - Introduction to Human Geography 4 Credit(s) \*  
GEOG 201 - World Regional Geography 4 Credit(s) \*  
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 - History of Western Civilization 4 Credit(s)  
HST 102 - History of Western Civilization 4 Credit(s)  
HST 103 - History of Western Civilization 4 Credit(s)  
HST 104 - World History 4 Credit(s) \*  
HST 105 - World History 4 Credit(s) \*  
HST 106 - World History 4 Credit(s) \*  
HST 195 - History of the Vietnam War 4 Credit(s) \*  
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) \*  
HST 208 - US History Since 1945 4 Credit(s)  
HST 209 - American History: The Civil War 4 Credit(s)  
HST 266 - US Women's History 4 Credit(s) \*

## Humanities

HUM 100 - Humanities Through the Arts 4 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)

## 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) \*  
PS 208 - Introduction to Political Theory 4 Credit(s)  
PS 211 - Peace and Conflict Studies: Global 4 Credit(s)  
PS 212 - Peace and Conflict Studies: National 4 Credit(s)  
PS 213 - Peace and Conflict Studies: Local 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) \*

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) \*

SOC 208 - Sport and Society 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) \*

SOC 225 - Social Problems 4 Credit(s)

SOC 228 - Introduction to Environmental Sociology 4 Credit(s)

## Student Leadership Development

SLD 111 - Chicano/Latino Leadership 1: Quien Soy? Quienes 4 Credit(s) \*

SLD 112 - Chicano/Latino Leadership 2: Cultural Heroes 4 Credit(s) \*

SLD 113 - Chicano/Latino Leadership 3: Affirmative & Resistance 4 Credit(s) \*

SLD 121 - African American Leadership: History, Philosophy, & Practice 4 Credit(s) \*

## Women's Studies

WS 101 - Introduction to Women's Studies 4 Credit(s) \*

## SCIENCE/MATHEMATICS/COMPUTER SCIENCE

Courses marked with an asterisk (\*) are approved to meet the Cultural Literacy requirement.

## Approved Lab Courses

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.

## 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

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) \*

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

CH 104 - Introduction to General Chemistry 5 Credit(s)

CH 106 - Introduction 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)

CH 221 - General Chemistry 1 6 Credit(s)

CH 222 - General Chemistry 2 6 Credit(s)

CH 223 - General Chemistry 3 6 Credit(s)

CH 241 - Organic Chemistry 6 Credit(s)

CH 242 - Organic Chemistry 6 Credit(s)

CH 243 - Organic Chemistry 6 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 and Climate Change 4 Credit(s)

ENSC 183 - Aquatic Environment 4 Credit(s)

ENSC 183\_H - Aquatic Environment 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)

## 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

Courses marked with an asterisk (\*) are approved to meet the Cultural Literacy requirement.

## Anthropology

ANTH 101 - Physical Anthropology 4 Credit(s)

ANTH 102 - World Archaeology 4 Credit(s) \*

ANTH 102\_H - World Archaeology-Honors 4 Credit(s) \*



## Chemistry

CH 112 - Chemistry for Health Occupations 4 Credit(s)

## Computer Science

CS 160 - Orientation to Computer Science 4 Credit(s)

CS 161C - Computer Science 1 4 Credit(s)

CS 133C - Beginning Programming 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 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)

## ORAL COMMUNICATION

COMM 100 - Basic Communications 4 Credit(s)

COMM 111 - Fundamentals of Public Speaking 4 Credit(s)

COMM 111\_H - Fundamentals of Public Speaking-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)

## HEALTH/WELLNESS/FITNESS

### 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 222 - Consumer 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 262 - First Aid 2: Beyond the Basics 3 Credit(s)

HE 275 - Lifetime Health and Fitness 3 Credit(s)

HP 101 - Introduction to Health Care and Public Health 4 Credit(s)

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## Associate of Science, AS

For students intending to transfer, the Associate of Science (AS) degree may best match general education requirements of some four-year colleges or universities.

A student selecting this transfer option still must meet the receiving university's admission requirements, including course standing, grade-point average and foreign language requirement.

**The AS is not a block transfer degree** and does not guarantee that a student will have met the lower-division general education requirements for baccalaureate degree programs. Students are encouraged to work with an academic advisor to match career goals with an appropriate major and to select appropriate courses for their intended transfer institution.

### Learning Outcomes

Lane degrees and certificates are aligned with Lane's Core Learning Outcomes and Oregon learning outcomes.

### Degree Requirements

- Complete a minimum of 90 credits of college-level coursework.
- Complete a minimum of 24 credits at Lane.
- Pass all Foundational Skills courses with a grade of "C-" or "P" or better.
- Pass all Discipline Studies and Elective courses with a grade of "D-" or "P" or better.
- Maximum 16 credits "P" 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 Science degree is awarded.

## General Education: Foundational

Foundational Skills must be a minimum of 3 credits each, except for Health/PE/Dance courses, which may be any number of credits.

### Writing

**Two courses (minimum 3 credits each).** Choose two of the following:

- WR 115 - Introduction to College Composition 4 Credit(s)
- 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
- WR 123 - Composition: Research Writing 4 Credit(s)
- WR 227 - Technical Writing 4 Credit(s) or WR 227\_H

### Mathematics

One course (minimum 4 credits)

- MTH 105 - Math in Society 4 Credit(s) or higher

### Health/PE/Dance

Three credits of any PE or Dance, or 3 credits of Health from the approved Health/Physical Education/Dance (AS) list.

## General Education: Discipline Studies

Minimum of 15 courses are required from the disciplines identified below. Discipline Studies courses must be a minimum of 3 credits each.

### Arts and Letters

Three courses from the approved Arts and Letters (AS) list.

### Social Science

Three courses from the approved Social Science (AS) list.

### Science/Math/Computer Science

Nine courses from the approved Science/Math/Computer Science (AS) list.

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.

## Electives

- Any courses, 100-level or higher, that bring total credits to 90, including:
  - Up to 18 credits of Cooperative Education.
  - Up to 12 credits of Individual Music Lessons (MUP).
  - Up to 12 credits of Physical Education activity may be included within the entire degree.
  - Up to 12 credits of Career Technical Education. See the list of Career Technical Education Courses. Policies on accepting Career Technical credits vary at other colleges and universities. Consult an academic advisor before taking Career Technical Education courses as Electives.

## Notes

- College-level courses are numbered 100 or higher. Courses numbered 001-099 are considered developmental.
- University second language admission requirements for transfer students graduating high school in 1997 and thereafter include one of the following:
  - two terms of a college-level second language with an average grade of C- or above, OR
  - two years of the same high school-level second language with an average grade of C- or above, OR
  - satisfactory performance on an approved second language assessment of proficiency.
- demonstrated proficiency in American Sign Language meets this second language admission requirement.
- Credit-by-Exam and Credit-by-Assessment may comprise up to 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.
- Lower-division college-level courses (100 and 200-level) taken at Lane might not meet the requirements of an upper-division course with a similar title and content offered by other colleges and universities. In such cases, the courses in question will generally transfer as electives.
- Courses numbered 199, 280, 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 Discipline Studies.

## Approved Courses for the Associate of Science (AS) General Education requirements

### HEALTH/PHYSICAL EDUCATION/DANCE (AS)

#### Physical Education

Students may use courses from any of the following categories to meet Health/PE/Dance 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 195 - Pointe 1 Credit(s)
- D 251 - Looking at Dance 4 Credit(s)
- D 257 - Dance Improvisation 2 Credit(s)
- D 260 - Group Choreography 3 Credit(s)
- D 261 - Dance Rehearsal and Performance 1-3 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 222 - Consumer Health 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 251 - Wilderness First Aid 3 Credit(s)
- HE 252 - First Aid 3 Credit(s)
- HE 255 - Global Health and Sustainability 4 Credit(s)
- HE 262 - First Aid 2: Beyond the Basics 3 Credit(s)
- HE 275 - Lifetime Health and Fitness 3 Credit(s)
- HP 101 - Introduction to Health Care and Public Health 4 Credit(s)

### ARTS AND LETTERS (AS)

#### American Sign Language

- ASL 101 - 1st Year American Sign Language 4 Credit(s)
- ASL 102 - 1st Year American Sign Language 4 Credit(s)
- ASL 103 - 1st Year American Sign Language 4 Credit(s)

#### 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 119 - Typography 1 3 Credit(s)
- ART 120 - Intermediate Artist Books and Pop-up 4 Credit(s)
- ART 131 - Introduction to Drawing 3 Credit(s)

ART 216 - Digital Design Tools 3 Credit(s)  
 ART 220 - Documentary Photography 3 Credit(s)  
 ART 221 - Graphic Design 1 4 Credit(s)  
 ART 222 - Graphic Design 2 4 Credit(s)  
 ART 223 - Graphic Design 3 4 Credit(s)  
 ART 225 - Digital Illustration 3 Credit(s)  
 ART 227 - Graphic Design Production 1 3 Credit(s)  
 ART 228 - Graphic Design Production 2 4 Credit(s)  
 ART 229 - Graphic Design Production 3 4 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 245 - Drawing for Media 4 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 255 - Alchemy of Ceramics: Materiality, Chemistry, and Kiln Firing 3 Credit(s)  
 ART 261 - Photography 1 3 Credit(s)  
 ART 266 - Off-Loom Fibers 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: Intermediate Traditional and Digital Etching 3 Credit(s)  
 ART 274 - Printmaking: Intermediate 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 286 - Sculpting for Animators 3 Credit(s)  
 ART 288 - Introduction to Web Design and Social Media 3 Credit(s)  
 ART 289 - Web Production 3 Credit(s)  
 ART 290 - Design Concepts for the Web 3 Credit(s)  
 ART 291 - Sculpture: Metal Casting 5 Credit(s)  
 ART 292 - Design Art for Public Places 4 Credit(s)  
 ART 293 - Sculpture: Figure 3 Credit(s)  
 ART 294 - Watercolor: Introduction 3 Credit(s)  
 ART 295 - Watercolor: Intermediate 3 Credit(s)  
 ART 296 - Mural Painting Class 4 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)  
 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)  
 ARH 208 - History of Chinese Art 3 Credit(s)  
 ARH 209 - History of Japanese Art 3 Credit(s)  
 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)  
 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)

## Business

BA 214 - Business Communications 4 Credit(s)

## Chinuk Wawa

CW 101 - Chinuk Wawa 4 Credit(s)  
 CW 102 - Chinuk Wawa 4 Credit(s)  
 CW 103 - Chinuk Wawa 4 Credit(s)  
 CW 201 - Chinuk Wawa 4 Credit(s)  
 CW 202 - Chinuk Wawa 4 Credit(s)  
 CW 203 - Chinuk Wawa 4 Credit(s)

## 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 the 1960s 4 Credit(s)  
 CINE 267 - Film History 3-1960s-the present 4 Credit(s)

## Communication

COMM 100 - Basic Communications 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 112 - Persuasive Speech 4 Credit(s)  
 COMM 115 - Introduction to Intercultural Communication 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 220 - Communication, Gender and Culture 4 Credit(s)  
 COMM 260 - Introduction to Conflict Management 4 Credit(s)  
 COMM 265 - Environmental Communication 4 Credit(s)  
 COMM 285 - Mediated Communication 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)  
 D 260 - Group Choreography 3 Credit(s)

## Effective Learning

EL 110 - Effective College Reading 1-3 Credit(s)  
 EL 113 - Connections: Specific Study Skills 3 Credit(s)  
 EL 115 - Effective Learning 3 Credit(s)  
 EL 115R - Critical Thinking for College Reading 3 Credit(s)  
 EL 116 - Critical Thinking for Paragraph Writing 3 Credit(s)  
 EL 117 - Critical Thinking for Essay Writing 3 Credit(s)  
 EL 121 - Effective Digital Learning 1-3 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)  
 ENG 109 - Survey of World Literature 4 Credit(s)  
 ENG 151 - Black American Literature 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)  
 ENG 217 - Reading, Writing and Digital Culture 4 Credit(s)  
 ENG 222 - Literature and Gender 4 Credit(s)  
 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)  
ENG 232 - Native American Literature, Myth and Folklore 4 Credit(s)  
ENG 240 - Nature Literature 4 Credit(s)  
ENG 243 - Native American Autobiography 4 Credit(s)  
ENG 244 - Asian American Literature 4 Credit(s)  
ENG 250 - Introduction to Folklore and Mythology 4 Credit(s)  
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 and Non-Fiction 4 Credit(s)  
ENG 260 - Introduction to Women Writers 4 Credit(s)

### **Ethnic Studies**

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

### **Film Arts**

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 254 - Fundamentals of Lighting 3 Credit(s)  
FA 255 - Understanding Movies: American Cinema 3 Credit(s)  
FA 256 - Lighting for Photography 3 Credit(s)  
FA 261 - Writing and Interactive Design 3 Credit(s)  
FA 264 - Women Make Movies 4 Credit(s)  
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)

### **French**

FR 101 - First-Year French 5 Credit(s)  
FR 102 - First-Year French 5 Credit(s)  
FR 103 - First-Year French 5 Credit(s)  
FR 188 - Study Abroad: French Language and Culture in Normandy 6 Credit(s)  
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 211 - Conversational French 2 Credit(s)  
FR 288 - Study Abroad: French Language and Culture in Normandy 6 Credit(s)

### **Humanities**

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

### **Journalism**

J 134 - Photojournalism 3 Credit(s)  
J 216 - Newswriting 1 3 Credit(s)  
J 234 - Photojournalism 2 4 Credit(s)

### **Mandarin Chinese**

CHN 101 - 1st Year Mandarin Chinese 4 Credit(s)  
CHN 102 - 1st Year Mandarin Chinese 4 Credit(s)  
CHN 103 - 1st Year Mandarin Chinese 4 Credit(s)

### **Music**

MUS 118 - Music Technology MIDI/Audio 1 4 Credit(s)  
MUS 119 - Music Technology MIDI/Audio 2 4 Credit(s)  
MUS 101 - Music Fundamentals 3 Credit(s)  
MUS 103 - Songwriting 1 3 Credit(s)  
MUS 107 - Audio Engineering 1 3 Credit(s)  
MUS 109 - Audio Engineering 2 4 Credit(s)  
MUS 110 - Audio Engineering 3 4 Credit(s)  
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 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 3 Credit(s)  
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)  
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)

### **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 101 - Spanish, First-Year 5 Credit(s)  
SPAN 102 - Spanish, First-Year 5 Credit(s)  
SPAN 103 - Spanish, First-Year 5 Credit(s)  
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)  
SPAN 221 - Spanish for Health Professions 1 4 Credit(s)

### **Theatre Arts**

TA 121 - Introduction to Costume Design 3 Credit(s)  
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 150 - Technical Production 3 Credit(s)  
TA 153 - Theatre Rehearsal and Performance 1-3 Credit(s)  
TA 227 - Stage Makeup 3 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 253 - Theatre Rehearsal and Performance 1-3 Credit(s)  
TA 272 - Introduction to Theatre 4 Credit(s)  
TA 272\_H - Introduction to Theatre-Honors 4 Credit(s)

### **Writing**

WR 115 - Introduction to College Composition 4 Credit(s)  
WR 115W - Introduction to College Writing: Workplace Emphasis 3 Credit(s)  
WR 121 - Academic Composition 4 Credit(s)  
WR 121\_H - Academic Composition-Honors 4 Credit(s)  
WR 122 - Argument, Research and Multimodal Composition 4 Credit(s)  
WR 122\_H - Argument, Research and Multimodal Composition-Honors 4 Credit(s)  
WR 123 - Composition: Research Writing 4 Credit(s)  
WR 227 - Technical Writing 4 Credit(s)  
WR 227\_H - Technical Writing-Honors 4 Credit(s)

## **SOCIAL SCIENCE (AS)**

### **Anthropology**

ANTH 101 - Physical Anthropology 4 Credit(s)  
ANTH 102 - World Archaeology 4 Credit(s)  
ANTH 102\_H - World Archaeology-Honors 4 Credit(s)  
ANTH 103 - Cultural Anthropology 4 Credit(s)  
ANTH 227 - Prehistory of Mexico 4 Credit(s)  
ANTH 228 - Chicano Cultures 4 Credit(s)  
ANTH 231 - American Indian Studies 3 Credit(s)  
ANTH 232 - American Indian Studies 3 Credit(s)  
ANTH 233 - American Indian Studies 3 Credit(s)

### **Business**

BA 101 - Introduction to Business 4 Credit(s)

## **Criminal Justice**

CJA 100 - Introduction to Criminal Justice 4 Credit(s)  
CJA 200 - Introduction to Criminology 4 Credit(s)  
CJA 201 - Juvenile Delinquency 3 Credit(s)  
CJA 207 - Gender, Crime and Justice 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)  
CJA 232 - Correctional Casework 3 Credit(s)

## **College Success | Career Development**

CG 100 - College Success 1-3 Credit(s)  
CG 140 - Career and Life Planning 1-3 Credit(s)  
CG 140T - Career and Life Planning: WIT 3 Credit(s)  
CG 203 - Human Relations at Work 1-3 Credit(s)  
CG 207 - Life Transitions 2 3 Credit(s)  
CG 210 - Life Transitions 3 3 Credit(s)  
CG 213 - Improving Parent Child Relations 3 Credit(s)  
CG 220 - Life Transitions: Women in Transition 4 Credit(s)

## **Economics**

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)  
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 200 - Foundations of Education Seminar 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)  
ED 269 - Inclusion and Special Needs 3 Credit(s)

## **Ethnic Studies**

ES 101 - Historical Racial and Ethnic Issues 4 Credit(s)  
ES 102 - Contemporary Racial and Ethnic Issues 4 Credit(s)  
ES 212 - Chicano/Latino Studies: Political and Ideological Perspectives 4 Credit(s)  
ES 213 - Chicano/Latino Studies: Contemporary Identity and Cultural Issues 4 Credit(s)  
ES 221 - African American Studies: Down from the Pyramids, Up from Slavery 4 Credit(s)  
ES 223 - African American Studies: A Luta Continua: The Struggle Continues 4 Credit(s)  
ES 241 - Native American Studies: Consequences of Native American and European Contact 4 Credit(s)  
ES 243 - Native American Studies: Contemporary Indigenous Issues 4 Credit(s)  
ES 244 - Native American Leadership 1: Building Leadership Through Indigenous Oratory 4 Credit(s)

## **Geography**

GEOG 141 - Natural Environment 4 Credit(s)  
GEOG 142 - Introduction to Human Geography 4 Credit(s)  
GEOG 201 - World Regional Geography 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)

## **Health**

HE 212 - Women's Health 3 Credit(s)  
HE 255 - Global Health and Sustainability 4 Credit(s)

## **Human Services**

HS 102 - Psychopharmacology 4 Credit(s)  
HS 107 - Aging: A Social and Developmental Perspective 3 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 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 224 - Group Counseling Skills 3 Credit(s)  
HS 226 - Ethics and Law 3 Credit(s)  
HS 229 - Grief and Loss Across Life Span 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)

## **History**

HST 101 - History of Western Civilization 4 Credit(s)  
HST 102 - History of Western Civilization 4 Credit(s)  
HST 103 - History of Western Civilization 4 Credit(s)  
HST 104 - World History 4 Credit(s)  
HST 105 - World History 4 Credit(s)  
HST 106 - World History 4 Credit(s)  
HST 195 - History of the Vietnam War 4 Credit(s)  
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)  
HST 208 - US History Since 1945 4 Credit(s)  
HST 209 - American History: The Civil War 4 Credit(s)  
HST 266 - US Women's History 4 Credit(s)

## **Humanities**

HUM 100 - Humanities Through the Arts 4 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)

## **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)  
PS 208 - Introduction to Political Theory 4 Credit(s)  
PS 211 - Peace and Conflict Studies: Global 4 Credit(s)  
PS 212 - Peace and Conflict Studies: National 4 Credit(s)  
PS 213 - Peace and Conflict Studies: Local 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 110 - Exploring Psychology 3 Credit(s)  
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 231 - Human Sexual Behavior 4 Credit(s)  
PSY 239 - Introduction to Abnormal Psychology 3 Credit(s)

## **Student Leadership Development**

SLD 121 - African American Leadership: History, Philosophy, & Practice 4 Credit(s)

## Sociology

SOC 108A - Selected Topics in Women's Studies, Women's Bodies, Women's Selves 3 Credit(s)  
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)  
SOC 208 - Sport and Society 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)  
SOC 225 - Social Problems 4 Credit(s)  
SOC 228 - Introduction to Environmental Sociology 4 Credit(s)

## Women's Studies

WS 101 - Introduction to Women's Studies 4 Credit(s)

## SCIENCE/MATH/COMPUTER SCIENCE (AS)

### Anthropology

ANTH 101 - Physical Anthropology 4 Credit(s)  
ANTH 102 - World Archaeology 4 Credit(s)  
ANTH 102\_H - World Archaeology-Honors 4 Credit(s)

### 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

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)  
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

CH 104 - Introduction to General Chemistry 5 Credit(s)

CH 106 - Introduction to Organic and Biological Chemistry 5 Credit(s)  
CH 112 - Chemistry for Health Occupations 4 Credit(s)  
CH 114 - Introduction to Forensic Chemistry 4 Credit(s)  
CH 150 - Preparatory Chemistry 3 Credit(s)  
CH 170 - Introduction to Environmental Chemistry 4 Credit(s)  
CH 201 - Chemistry for Engineering Majors I 4 Credit(s)  
CH 202 - Chemistry for Engineering Majors 2 4 Credit(s)  
CH 221 - General Chemistry 1 6 Credit(s)  
CH 222 - General Chemistry 2 6 Credit(s)  
CH 223 - General Chemistry 3 6 Credit(s)  
CH 241 - Organic Chemistry 6 Credit(s)  
CH 242 - Organic Chemistry 6 Credit(s)  
CH 243 - Organic Chemistry 6 Credit(s)

### Computer Science

CS 120 - Concepts of Computing: Information Processing 4 Credit(s)  
CS 133C - Beginning Programming 4 Credit(s)  
CS 133JS - Beg. Programming: JavaScript 4 Credit(s)  
CS 133N - Beginning Programming: C# 4 Credit(s)  
CS 133P - Beginning Programming: Python 4 Credit(s)  
CS 160 - Orientation to Computer Science 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 179 - Introduction to Computer Networks 4 Credit(s)  
CS 233C - Intermediate Programming 4 Credit(s)  
CS 233JS - Intermediate Programming: JavaScript 4 Credit(s)  
CS 233N - Intermediate Programming C# 4 Credit(s)  
CS 233P - Intermediate Programming: Python 4 Credit(s)  
CS 234N - Advanced Programming: C# 4 Credit(s)  
CS 260 - Data Structures 1 4 Credit(s)

### Criminal Justice

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

### Dental Assisting

DA 110 - Dental Health Sciences 3 Credit(s)

### Drafting

DRF 205 - Drafting: Structures 4 Credit(s)  
DRF 207 - Drafting: Strength of Materials 4 Credit(s)

### Electronics

ET 129 - Electrical Theory 1 4 Credit(s)

### Engineering

ENGR 101 - Engineering Orientation 3 Credit(s)  
ENGR 102 - Engineering Orientation 2 4 Credit(s)  
ENGR 115 - Engineering Graphics 3 Credit(s)  
ENGR 211 - Statics 4 Credit(s)  
ENGR 212 - Dynamics 4 Credit(s)  
ENGR 213 - Strength of Materials 4 Credit(s)  
ENGR 221 - Electrical Fundamentals 1 4 Credit(s)

### Environmental Science

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 183\_H - Aquatic Environment 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 109 - Meteorology 5 Credit(s)  
GS 142 - Earth Science: Earth Revealed 4 Credit(s)



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

## Geography

GEOG 141 - Natural Environment 4 Credit(s)

GEOG 201 - World Regional Geography 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)

## 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)

## Health Professions

HP 150 - Human Body Systems 1 3 Credit(s)

HP 152 - Human Body Systems 2 3 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)

## 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)

# Associate of Applied Science Degree Programs

## Associate of Applied Science (AAS) 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 Core 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)

## 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

- Only the Academic Requirements Review Committee (ARRC) may waive a college-related instruction requirement. Petitions are available from Enrollment Services at [lanec.edu/esfs/general-education-substitution-and-waiver-petition](http://lanec.edu/esfs/general-education-substitution-and-waiver-petition).
- College-level courses are numbered 100 or higher. Courses numbered 001-099 are considered developmental.
- Lower-division college-level courses (100 and 200-level) taken at Lane generally do not meet the requirements of an upper-division course with a similar title and content offered by other colleges and universities. In such cases, the courses in question will generally transfer as electives.
- Career Technical courses taken at Lane might not meet the requirements of upper- and lower-division courses with similar titles and content offered by other colleges and universities. In such cases, the transfer institution may limit the number of credits accepted.
- 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.
- Courses numbered 180, 197, 199, 280, 297, 298, or 299 count as electives, and do not meet General Education requirements.
- 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.
- Credit-by-exam or credit-by-assessment may be awarded consistent with College policies and procedures.

## Accounting, AAS

**Length:** Two years, 90 credits

### Program Contacts

Offered by the Business Department

Program Coordinator: Chris Culver, 541.463.5153, [culverc@lanec.edu](mailto:culverc@lanec.edu)

Business Academic Advising Team: [BusinessAdvising@lanec.edu](mailto:BusinessAdvising@lanec.edu); drop-in advising calendar [lanec.edu/advising/drop-advising](http://lanec.edu/advising/drop-advising); 541.463.3800

Cooperative Education: [lanec.edu/cooped/contact](http://lanec.edu/cooped/contact)

### Estimated Cost: \$16,535

- Books/Course Materials - \$2,281
- Computers/Internet Service - \$1,500
- Online Course Fees - \$300
- Technology Fees - \$810
- Resident Tuition and General Student Fees - \$11,644

Tuition and fee estimates are based on the prior academic year's rates. Course fees may change during the year. Learn more and view updated tuition and fee information at [lanec.edu/esfs/credit-tuition](http://lanec.edu/esfs/credit-tuition).

## 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:

- Operate effectively within time constraints to meet the accounting needs of financial, tax, payroll, and legal compliance requirements
- Use computerized and manual systems to record accounting data and prepare accounting statements and reports
- Perform on the job in ways that reflect professional ethics, legal standards, and organizational expectations
- Use accounting and financial information to make informed and timely planning and budgeting decisions to promote organizational goals
- 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
- Use research and analytical skills to gather and interpret data to support business decisions

## Program Requirements

### General Education

GENERAL EDUCATION courses must be completed with a letter grade of C- or better, or Pass.

**Writing (4 credits):** WR 121 - Academic Composition 4 Credit(s) or WR 121\_H - Academic Composition-Honors 4 Credit(s)

### Math (9 credits)

MTH 095 - Intermediate Algebra 5 Credit(s) or MTH 098 - Math Literacy 5 Credit(s), or higher

MTH 105 - Math in Society 4 Credit(s), or higher

**Health/PE/Dance (3 credits):** Complete any Health (HE), Physical Education (PE, PEAT, PEO), or Dance (D) course or any combination of these courses.

## Program Core Courses

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.

- 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 using Adobe Acrobat 4 Credit(s)
- BT 272 - Tax concepts and Preparation 4 Credit(s)
- BT 286 - Professional Bookkeeping 4 Credit(s)

## Cooperative Education

COOPERATIVE EDUCATION courses must be completed with a grade of C- or better. P/NP is not accepted.

Complete the following:

- BT 206 - Co-op Ed: Business Seminar 2 Credit(s)
- Complete 3 credits of BA 280AC - Co-op Ed: Accounting

## Electives

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

**Complete any course(s) 100-level or higher to reach 90 credits.**

### Notes

- This program follows Associate of Applied Science (AAS) Requirements unless otherwise specified
- Students must place at least into WR 121 or WR 121\_H and MTH 095, or take classes to reach these levels before enrolling in program courses.
- If math is taken in the self-paced format through the Math Resource Center then all credits must be completed to meet math requirements.
- 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.
- Before enrolling in BA 214 - Business Communications, students must pass BT 108 - Business Proofreading and Editing.
- These courses may only be offered once per year. Contact the department for class schedule. BT 170 - Payroll Records and Accounting, BT 223 - MS EXCEL for Business-Expert, BT 272 - Tax concepts and Preparation, BT 221 - Budgeting for Managers, BT 286 - Professional Bookkeeping
- Students using lower-credit courses to meet General Education requirements may need to take additional Electives to meet the 90-credit minimum.

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## Automotive Technology, AAS

**Length:** Two years, 90 credits

### Program Contacts

Offered by: Advanced Technology Division

Program Coordinator: Tracy Rea, [reat@lanecc.edu](mailto:reat@lanecc.edu), 541.463.5151

Advanced Technology Academic Advising Team: [advtechprograms@lanecc.edu](mailto:advtechprograms@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

Cooperative Education: [lanecc.edu/cooped/contact](http://lanecc.edu/cooped/contact)

### Estimated Cost: \$22,470

- Books - \$1,238
- Differential Fees - \$3,007
- Instruments/Tools - \$3,170
- Program-Specific Fees - \$1,057
- Resident Tuition and General Student Fees - \$14,006

Tuition and fee estimates are based on the prior academic year's rates. Course fees may change during the year. Learn more and view updated tuition and fee information at [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

## Learning Outcomes

The purpose of this program is to prepare the graduate 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:

- 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.
- 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.
- Diagnose and repair current vehicles using advanced diagnostic tools and equipment.
- Successfully complete ASE certification tests.
- Demonstrate and use industry safety standards.
- Access library, computing, and communications services and obtain information and data from regional and national networks.
- Interpret the concepts of a problem-solving task and translate them into mathematical equations.

## Program Requirements

### General Education

GENERAL EDUCATION 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)

#### 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 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 is the parent program for the Automotive Technology, 2-yr Certificate
- 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. 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. 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 to OIT.

## Certification

Automotive Technology is certified by the National Automotive Technicians Education Foundation, a non-profit foundation within the National Institute for Automotive Service Excellence.

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## Aviation Maintenance Technician, AAS

**Length:** Two years, 104 credits

### Program Contacts

Offered by Lane Aviation Academy

Program Coordinator: Neal Gallagher, Chief Instructor, [gallagher@lanecc.edu](mailto:gallagher@lanecc.edu), 541.463.4351

Academic Advising Team: [advtechprograms@lanecc.edu](mailto:advtechprograms@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

### Estimated Cost: \$17,648

- Books - \$300
- Certification, Licensure, Exams, Physicals - \$1,500
- Instruments/Tools - \$500
- Program-Specific Fees - \$3,150
- Resident Tuition and General Student Fees - \$12,198

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

## 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:

- Repair and maintain aircraft in operating condition.
- Pass the FAA written, oral and practical exams for certification.
- Demonstrate and use industry safety standards.
- Access library, computing, and communications services and networks.
- Utilize mathematical and troubleshooting concepts.

## Program Requirements

### General Education

**General Education** 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)

## 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.
- This is the parent program for the Aviation Maintenance Technician, 2-yr Certificate.
- 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 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 requirement 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 [lanecc.edu/cooped](http://lanecc.edu/cooped)

## 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.

## Business Management, AAS

**Length:** Two years, 90 credits

### Program Contacts

Offered by the Business Department

Program Coordinators: LuAnne Johnson ([johnsonl@lanecc.edu](mailto:johnsonl@lanecc.edu), 541.463.5767) and Chris Culver ([culverc@lanecc.edu](mailto:culverc@lanecc.edu), 541.463.5153)

Business Advising Team: [BusinessAdvising@lanecc.edu](mailto:BusinessAdvising@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

Cooperative Education: [lanecc.edu/cooped/contact](http://lanecc.edu/cooped/contact)

**Estimated Cost: \$16,148**

- Books/Course Materials - \$1,894
- Computers/Internet Service - \$1,500
- Online Course Fees - \$300
- Technology Fees - \$810
- Resident Tuition and General Student Fees - \$11,644

Tuition and fee estimates are based on the prior academic year's rates. Course fees may change during the year. Learn more and view updated tuition and fee information at [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

## 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:**

- Apply adaptive marketing, financial, managerial, and leadership theories in a business context
- Demonstrate an understanding of the functions of leading, planning, organizing, and controlling in an organization
- Perform on the job in ways that reflect professional ethics, legal standards, and organizational expectations
- Use accounting and financial information to make informed and timely planning and budgeting decisions to promote organizational goals
- 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
- Use research and analytical skills to gather and interpret data to support business decisions

## Program Requirements

### General Education

GENERAL EDUCATION courses must be completed with a letter grade of C- or better, or Pass.

**Writing (4 credits):** WR 121 - Academic Composition 4 Credit(s) or WR 121\_H - Academic Composition-Honors

**Math (9 credits):**

- MTH 095 - Intermediate Algebra 5 Credit(s) or MTH 098 - Math Literacy 5 Credit(s)
- MTH 105 - Math in Society 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.

### Program Core Courses

CORE courses must be completed with a letter grade of C or better. P/NP not accepted. BA 278 meets the Human Relations requirement.

- BA 101 - Introduction to Business 4 Credit(s)
- BA 206 - Management Fundamentals 4 Credit(s)
- BA 214 - Business Communications 4 Credit(s) (Arts & Letters)
- 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 223 - MS EXCEL for Business-Expert 4 Credit(s)
- BT 291 - Operations Management 4 Credit(s)

#### Choice of:

- BA 211 - Financial Accounting 4 Credit(s)
- or
- BT 165 - Introduction to the Accounting Cycle 4 Credit(s)

#### Cooperative Education (5 credits)

- BT 206 - Co-op Ed: Business Seminar 2 Credit(s)
- Complete 3 credits of BA 280 - Co-op Ed: Business Management

#### 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:**

#### Small Business Management

- 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)

#### Administrative Professional

- BT 144 - Administrative Procedures 4 Credit(s)
- BT 230 - Sustainable Paperless Practices using Adobe Acrobat 4 Credit(s)
- BT 271 - Administrative Office Professional Advanced Projects 4 Credit(s)

Choice of:

- BT 221 - Budgeting for Managers 4 Credit(s)

OR

- BT 163 - QuickBooks 4 Credit(s)

#### Project Management

- BT 230 - Sustainable Paperless Practices using Adobe Acrobat 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 144 - Administrative Procedures 4 Credit(s)
- BT 170 - Payroll Records and Accounting 4 Credit(s)
- BA 224 - Human Resource Management 4 Credit(s)
- BT 230 - Sustainable Paperless Practices using Adobe Acrobat 4 Credit(s)

#### Electives

ELECTIVES must be completed with a letter grade of C- or better, or Pass. **Complete electives to meet 90 credits. Select any course(s), 100-level or higher.** See Courses for options.

#### Notes

- This is the parent program for the Business Assistant, 1-yr Certificate.
- 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 144; 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.
- If math is taken in the self-paced format through the Math Resource Center then all credits must be completed to meet math requirements.
- Students using lower-credit courses to meet General Education requirements may need to take additional Electives to meet the 90-credit minimum.

## Commercial Unmanned Aerial Systems, AAS

**Length:** Two years, 90 credits

#### Program Contacts

Offered by Lane Aviation Academy

Program Coordinator: Walter (Sean) Parrish, Chief Flight Instructor, [parrishw@lanecc.edu](mailto:parrishw@lanecc.edu), 541.463.4323

Academic Advising Team: [advtechprograms@lanecc.edu](mailto:advtechprograms@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

#### Estimated Cost with Drafting Electives: \$22,317

- Books - \$1,500
- Certification, Licensure, Exams, Physicals - \$899
- Program-Specific Fees - \$7,720
- Resident Tuition and General Student Fees - \$12,198

#### Estimated Cost with Private Pilot Electives: \$33,139

- Books - \$1,500
- Certification, Licensure, Exams, Physicals - \$899
- Program-Specific Fees - \$18,542
- Resident Tuition and General Student Fees - \$12,198

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

#### Learning Outcomes

The purpose of this program is to prepare students for successful careers as commercial Unmanned Aerial Systems (UAS) operators.

#### Students who complete this program will have:

- Extensive knowledge of the National Airspace System and the integration of Unmanned Aerial Systems within it.
- Knowledge and experience with hobby grade and advanced commercial sensors and equipment.
- Ability to work within a crew/team environment.
- Safely pilot multi-copters and fixed wings in normal and emergency flight operations.
- Ability to properly plan and execute commercial missions unsupervised.
- Ability to successfully apply and utilize Federal Aviation Administration airspace waivers.
- Ability to build, program, and repair quad copters and radio controlled fixed wing unmanned aircraft.

#### Program Requirements

##### General Education

**General Education** 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 (5 credits) - Complete the following:

- MTH 095 - Intermediate Algebra 5 Credit(s)

##### Human Relations (3-4 credits) - Complete one of the following:

- FT 255 - Fundamentals of Instruction and Human Factors 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)

#### Program Core Courses

**FT and GS** courses must be completed with a letter grade of C- or better. P/ NP is not accepted. All other **Program Core** courses must be completed with a grade of C- or better, or Pass.

- ART 261 - Photography 1 3 Credit(s)
- BA 254 - General Aviation Management 3 Credit(s)
- GIS 151 - Digital Earth 4 Credit(s)
- GIS 245 - GIS 1 4 Credit(s)
- GIS 246 - GIS 2 4 Credit(s)
- GS 109 - Meteorology 5 Credit(s)
- MUL 105 - Digital Photography 4 Credit(s)

UAS and Flight Courses (32 Credits)

- FT 103 - Aircraft Safety Development 4 Credit(s)
- FT 121 - UA Platforms and Systems 4 Credit(s)
- FT 122 - UA Ground Control Systems 4 Credit(s)
- FT 123 - Commercial UAS Ground School 1 Credit(s)
- FT 230 - UAS Data Acquisition and Analysis 3 Credit(s)
- FT 231 - UAS Advanced Sensor 4 Credit(s)
- FT 235 - UAS Capstone Project 4 Credit(s)
- FT 250 - Private Pilot Ground School 5 Credit(s)
- FT 254 - Aerodynamics 3 Credit(s)

#### UAS Flight Labs (6 Credits)

- FT 124A - UAS Flight Lab 1 Credit(s)
- FT 124B - UAS Flight Lab 1 Credit(s)
- FT 124C - UAS Flight Lab 1 Credit(s)
- FT 124D - UAS Flight Lab 1 Credit(s)
- FT 124E - UAS Flight Lab 1 Credit(s)
- FT 124F - UAS Flight Lab 1 Credit(s)

### Program Electives

**Program Electives** must be completed with a grade of C- or better, or Pass.

**Private Pilot flight labs** are to be chosen based on student size. Students under 180 lbs, under 6'2", under 39" sitting height must complete FT 141, FT 142, and FT 143. Students at or above these limits must complete FT 141W, FT 142W, and FT 143W.

**Complete one of the following options (12 credits):**

Option 1:

- FT 141 / FT 141W - Pt 141 Private Pilot Stage 1 Pre-solo Flight and Ground Lecture 6 Credit(s)
- FT 142 / FT 142W - Pt 141 Private Pilot Stage 2 Post-solo Flight and Ground Lecture 3 Credit(s)
- FT 143 / FT 143W - Pt 141 Private Pilot Stage 3 Cross-country and Certification prep Flight and Ground Lecture 3 Credit(s)
- Option 2:
- DRF 160 - Computer-Aided Drafting and Design 4 Credit(s)
- DRF 220 - Building Information Modeling 4 Credit(s)
- ART 282 - Landscape and Architectural Photography 4 Credit(s)

**Complete additional credits (2-3) to meet 90:** Complete any course(s), 100-level or higher.

### Notes

- This program follows Associate of Applied Science (AAS) Requirements unless otherwise specified.
- This is the parent program for the Commercial Unmanned Aerial Systems: Aerial Photography, CPC and Commercial Unmanned Aerial Systems: Geographic Information Science, CPC Prerequisites are required for some courses. See Courses.
- At least 6 credits of FT 124 classes must be completed to fulfill the AAS degree requirements.
- Applicants are encouraged to complete the Human Relations requirement prior to program entry.
- One of the following courses may be substituted for MTH 095 to meet the math requirement: MTH 097, MTH 111, MTH 112, or any 200-level math course (except MTH 243 and MTH 261).
- FT 141W, FT 142W, and FT 143W are flown in a 4-seat aircraft (W=Warrior), which has a higher rental cost than the 2-seat aircraft used for FT 141, FT 142, and FT 143.
- Students considering transfer to a 4-year college or university should contact their Academic Advisor.

### Licensing and Certification

Commercial FAA Unmanned Aerial Systems (UAS) Part 107 license, Pix4D certification.

## Computer Network Operations, AAS

**Length:** Two years, 90 credits

#### Program Contacts

Offered by the Computer and Information Technology department

Program Coordinator: Joseph Colton, [coltonj@lanecc.edu](mailto:coltonj@lanecc.edu), 541.463.5249

CIT Academic Advising Team: [CITPrograms@lanecc.edu](mailto:CITPrograms@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

Cooperative Education: [lanecc.edu/cooped/contact](http://lanecc.edu/cooped/contact)

**Estimated Cost: \$15,851**

- Books/Materials - \$374
- Book/Class Fees - \$552
- Program Specific Fees - \$208
- Computers/Internet Service - \$1,500
- Resident Tuition - \$11,328
- Tech Fees - \$864
- General Student Fees - \$1,024

Course fees may change during the year. Learn more and view updated tuition and fee information at [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

### 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:**

- Explain network technologies
- Explain how devices access local and remote network resources.
- Describe router hardware.
- Explain how switching operates in a small to medium-sized business network.
- Design an IP addressing scheme to provide network connectivity for a small to medium-sized business network.
- Configure initial settings on a network device.
- Implement basic network connectivity between devices
- Configure monitoring tools available for small to medium-sized business networks.

### Program Requirements

#### General Education

**General Education** 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 111 - College Algebra 5 Credit(s)
- Any Math 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)

**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 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 Information 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 (100-level 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 recommended for second-year students in the degree 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' taking their first programming language (C, N, or P) will take CS 161/162. Because CS 161/162 are not repeatable courses, upon taking a second programming language, students must use the CS 133/233 course numbers. CS 161/162 are the courses listed in catalog degree requirements but CS 133/233 will be accepted as well. For help with this, contact the department or academic advisors.

# Computer Programming, AAS

**Length:** Two years, 90 credits

## Program Contacts

Offered by the Computer and Information Technology department

Program Coordinator: Brian Bird, [birdb@lanecc.edu](mailto:birdb@lanecc.edu), 541.463.3024

CIT Academic Advising Team: [CITPrograms@lanecc.edu](mailto:CITPrograms@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

Cooperative Education: [lanecc.edu/cooped/contact](http://lanecc.edu/cooped/contact)

## Estimated Cost: \$14,195

- Books/Materials - \$518
- Book/Class Fees - \$22
- Program Specific Fees - \$208
- Computer/Internet Service - \$1,500
- Tuition - \$10,148
- Tech Fees - \$774
- General Student Fees - \$1,024

Tuition and fee estimates are based on the prior academic year's rates. Course fees may change during the year. Learn more and view updated tuition and fee information at [lanecc.edu/ests/credit-tuition](http://lanecc.edu/ests/credit-tuition).

## 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:

- Design, implement, test, debug and document web based computer programs using a variety of current tools and technologies.
- Design, implement, test, debug and document at least one other type of computer program such as: game program, database program, object-oriented program.
- Understand the relationship between computer programs and organizational processes.
- Interpret the mathematical concepts of a programming related problem-solving task and translate them into programming logic and expressions.
- Use appropriate library and information resources to research programming tools and technologies and support lifelong technical learning.

## Program Requirements

### General Education

**General Education** 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 082 - Math for Network Operations 4 Credit(s)
- MTH 095 - Intermediate Algebra 5 Credit(s)
- MTH 097 - Geometry 4 Credit(s)
- MTH 098 - Math Literacy 5 Credit(s)
- MTH 111 - College Algebra 5 Credit(s)
- MTH 112 - Trigonometry 5 Credit(s)
- MTH 243 - Introduction to Probability and Statistics 4 Credit(s)
- or any 200-level MTH 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)

**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 credit):** Complete any 100- or 200-level course to meet this requirement.

## 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 must be completed with a letter grade of C- or better. P/NP is not accepted.

- 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 System and Modeling 4 Credit(s)

Choice of CS 160 or CIS 125A - Complete one of the following:

- CS 160 - Orientation to Computer Science 4 Credit(s)
- CIS 125A - Software Tools: App 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 Credit(s)

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:**

Programming majors are strongly advised to take CS 235AM and CS 235IM.

- CS 235AM - Intermediate Mobile Application Development: Android 4 Credit(s)
- CS 235IM - Intermediate Mobile Applications Development: IOS 4 Credit(s)
- CIS 140U - Introduction to Unix/Linux 4 Credit(s)
- CS 161C - Computer Science 1 4 Credit(s)
- CS 162C - Computer Science 2 4 Credit(s)
- CS 161P - Computer Science 1 4 Credit(s)
- CS 162P - Computer Science 2 4 Credit(s)
- CS 240U - Advanced Unix/Linux: Server Management 4 Credit(s)
- CS 260 - Data Structures 1 4 Credit(s)

## Notes

- This is the parent program for the Database Specialist, CPC, Front End Web Development, CPC, and Mobile Application 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.
- Students who complete the Computer Programming Degree will have completed all of the coursework to earn the Database Specialist, CPC and the Front End Web Development, CPC.
- Programming majors are strongly advised to take as electives CS 235AM and CS 235IM.
- Students using lower-credit courses to meet General Education requirements may need to take additional Electives to meet the 90-credit minimum
- 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.
- Computer programming languages: Students' taking their first programming language (C, N, or P) will take CS 161/162. Because CS 161/162 are not repeatable courses, upon taking a second programming language, students must use the CS 133/233 course numbers. CS 161/162 are the courses listed in catalog degree requirements but CS 133/233 will be accepted as well. For help with this, contact the department or academic advisors.

## Computer Simulation and Game Development

### Program Suspended

For students currently enrolled in the program, please contact Academic Advising at [CITPrograms@lanecc.edu](mailto:CITPrograms@lanecc.edu) for information about completing the program in a timely manner.

## Computer Simulation and Game Development: Art Option, AAS

**Length:** Two years, 90 credits

### Careers and Employment Opportunities

Learn about careers, wages, and current opportunities using the Career Pathways Roadmap for this program.

### Program Contacts

Offered by the Computer Information Technology Department

Program Coordinator: Jim Bailey, [baileyj@lanecc.edu](mailto:baileyj@lanecc.edu), 541.463.3148

Computer Information Technology Academic Advising Team: [CITPrograms@lanecc.edu](mailto:CITPrograms@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

Cooperative Education: [lanecc.edu/cooped/contact](http://lanecc.edu/cooped/contact)

**Estimated Cost:** \$15,851

- Books - \$374
- Books/Class Fees - \$552
- Computers/Internet Service - \$1,500
- Program-Specific Fees: \$208
- Resident Tuition - \$11,328
- Technology Fees - \$864
- Other Student Fees - \$1,024

Tuition and fee estimates are based on the prior academic year's rates. Course fees may change during the year. Learn more and view updated tuition and fee information at [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

## Learning Outcomes

The purpose of this program is to prepare students for positions working as artists for computer game development companies. Their skills will be general enough that they can also get jobs in animation or as graphic artists.

### Students who complete this program will be able to:

- Create computer simulations or games using industry-standard development tools.
- Become proficient in developing and applying effective visual design and production strategies for creating concept art, 3D models, and animations, for business, education, and entertainment industries.
- Understand the concepts, potential, and implications of communicating ideas using interactive media technologies.
- Develop skills and knowledge in computer animation using industry-standard tools.
- Design, create, and test state machines to control animations for simulation or game programs using a variety of industry-standard tools and technologies.
- Use appropriate library and information resources to research simulation and game development issues, to design tools and technologies, and to support lifelong technical learning.

## Program Requirements

### General Education

GENERAL EDUCATION courses must be completed with a letter grade of C- or better, or Pass.

### Writing (4 credits)

- WR 121 - Academic Composition or WR 121\_H - Academic Composition-Honors

### Math (4-5 credits). Complete one of the following:

- MTH 060 - Beginning Algebra 4 Credit(s)
- MTH 065 - Elementary Algebra 4 Credit(s)
- MTH 070 - Introductory Algebra 5 Credit(s)
- MTH 095 - Intermediate Algebra 5 Credit(s)
- MTH 111 - College Algebra 5 Credit(s)
- or choose any MTH course 200-level 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)

**Open Elective (3 credits):** Complete any courses, 100-level or higher, to meet this requirement.

## Program Core Courses

Complete one of the following (3-4 credits), with a grade of C- or better, or Pass:

- FA 261 - Writing and Interactive Design 3 Credit(s)
- WR 227 - Technical Writing 4 Credit(s)
- All other CORE courses listed below must be completed with a grade of B- or better. P/NP is not accepted.
- ART 116 - Basic Design: Color 3 Credit(s)
- ART 131 - Introduction to Drawing 3 Credit(s)
- ART 216 - Digital Design Tools 3 Credit(s)
- ART 245 - Drawing for Media 4 Credit(s)
- ART 286 - Sculpting for Animators 3 Credit(s)
- CIS 100 - Computing Careers Exploration 1 Credit(s)
- CIS 125G - Software Tools 1: Game Development 4 Credit(s)
- CIS 126 - Game Design: Principles and Practices 4 Credit(s)
- CIS 135G - Software Tools 2: Game Development 4 Credit(s)
- CS 246 - System Design 4 Credit(s)
- CS 297 - Programming Capstone 4 Credit(s)
- FA 221 - Computer Animation 4 Credit(s)
- FA 222 - Computer Animation 2 4 Credit(s)
- MUL 208 - Motion Capture for Animation 4 Credit(s)
- MUL 223 - Digital Sculpting and Texture 3 Credit(s)
- MUL 224 - Digital Painting 3 Credit(s)

## Cooperative Education

The following Co-op course must be completed with a grade of C- or better, or Pass.

- CS 206 - Co-op Ed: Computer Information Technology Seminar 2 Credit(s)
- The following Co-op course must be completed with a grade of B- or better. P/NP is not accepted.
- Complete 3 credits of CS 280GD - Co-op Ed: Computer Simulation and Game Development

## Program Electives

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

**Complete Electives to meet 90 credits (approximately 13-16 credits).**

- ART 117 - Basic Design: 3-Dimensional 3 Credit(s)
- ART 234 - Drawing: Figure 3 Credit(s)
- ART 293 - Sculpture: Figure 3 Credit(s)
- AUD 120 - Audio Production 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 234N - Advanced Programming: C# 4 Credit(s)
- MUL 103 - Time-Based Tools 4 Credit(s)
- MUL 119 - Introduction to Animation 3 Credit(s)
- MUS 118 - Music Technology MIDI/Audio 1 4 Credit(s)
- MUS 119 - Music Technology MIDI/Audio 2 4 Credit(s)

## Notes

- This program follows the Associate of Applied Science (AAS) Requirements unless otherwise specified.
- Second-year requirements: A personal laptop is required for second-year students. If you receive financial aid, some of those funds may be used for this purchase. Please contact the Program Coordinator for options and system requirements.
- Students using lower credit courses to meet General Education requirements may need to take additional Electives to meet the 90 credit minimum.

- Co-op is a required and important part of the Computer Simulation and Game Development Degree 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 programming field. Contact Gerry Meenaghan, Cooperative Education Coordinator, 541.463.5883

## Construction Technology, AAS

**Length:** Two years, 90 credits

### Program Contacts

Offered by: Advanced Technology Division

Program Coordinator: Tracy Rea, [reat@lanecc.edu](mailto:reat@lanecc.edu), 541.463.5151

Advanced Technology Academic Advising Team: [advtechprograms@lanecc.edu](mailto:advtechprograms@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

Cooperative Education: [lanecc.edu/cooped/contact](http://lanecc.edu/cooped/contact)

**Estimated Cost:** \$14,638

- Books - \$1,815
- Program-Specific Fees - \$468
- Resident Tuition and General Student Fees - \$12,355

Tuition and fee estimates are based on the prior academic year's rates. Course fees may change during the year. Learn more and view updated tuition and fee information.

## 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:**

- Demonstrate basic carpentry skills for the construction industry.
- Cut, fit, and assemble wood and other materials for building construction.
- Demonstrate and use industry safety standards.
- Use blueprint reading skills necessary to the profession.
- Demonstrate knowledge of laser level and field elevations.
- Enter the workforce in the field of construction.
- Use appropriate library and information resources to research professional issues.
- Interpret the concepts of a problem-solving task and translate them into mathematics.

## Program Requirements

### General Education

GENERAL EDUCATION 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)

**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, selected from the following:**

- 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)
- BA 101 - Introduction to Business 4 Credit(s)
- BT 165 - Introduction to the Accounting Cycle 4 Credit(s)
- COOP 206 - Co-op Ed: Internship Seminar 1-2 Credit(s)
- CST 201 - Sustainable Building Practices 3 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 220 - Building Information Modeling 4 Credit(s)
- ET 129 - Electrical Theory 1 4 Credit(s)
- 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)
- MTH 075 - Applied Algebra for Technicians 4 Credit(s)
- MTH 095 - Intermediate Algebra 5 Credit(s)
- WLD 121 - Shielded Metal Arc Welding 1 1-4 Credit(s)
- WLD 122 - Shielded Metal Arc Welding 2 1-4 Credit(s)
- WLD 143 - Wire Drive Welding 1 1-4 Credit(s)
- SPAN 101 - Spanish, First-Year 5 Credit(s)
- SPAN 102 - Spanish, First-Year 5 Credit(s)
- SPAN 103 - Spanish, First-Year 5 Credit(s)
- SPAN 201 - Spanish, Second-Year 4 Credit(s)
- SPAN 202 - Spanish, Second-Year 4 Credit(s)
- SPAN 203 - Spanish, Second-Year 4 Credit(s)

## Notes

- This program is the parent program for the Construction Technology, 1-yr Certificate
- A high school diploma or equivalent is recommended for all applicants to this program.
- This program follows the Associate of Applied Science (AAS) Requirements unless otherwise specified.
- Cooperative Education (Co-op): In certain circumstances, 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.

# Construction Trades, General Apprenticeship, AAS

Length: 90 credits

## Program Contacts

Offered by the Advanced Technology department

Program Coordinator: Joy Crump, [crumpj@lanecc.edu](mailto:crumpj@lanecc.edu), 541.463.5496

Academic Advising Team: [advtechprograms@lanecc.edu](mailto:advtechprograms@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

## Estimated Cost: \$13,758

- Books/Materials - \$1,560
- Resident Tuition and General Student Fees - \$12,198

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

## 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:

- Perform the duties and responsibilities of the individual construction trade/occupation.
- Apply theory as it relates to trade competencies.
- Demonstrate and use industry safety standards.
- Utilize recognized standard building codes guidelines as applicable.
- Prepare and utilize isometric sketching and detailed drawings per individual trade.
- Develop attitudes conducive to improved customer relations skills in the construction trades.
- Demonstrate communication and critical thinking skills necessary for job advancement.
- Use appropriate library and information resources to research professional issues and support lifelong learning.
- Access library, computing, and communications services, and appropriately select information and data from regional, national, and international networks.
- Represent, analyze and determine rules for finding patterns relating to linear functions, non-linear functions and arithmetic sequences with tables, graphs, and symbolic rules.
- 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](http://boli.state.or.us).

## Program Requirements

### General Education

GENERAL EDUCATION 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), choose 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)

## Program Core Courses

Complete all courses listed in one of the following trades. 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 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 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 (46 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 172 - Sheet Metal/HVAC/R Blueprint Reading 3 Credit(s)
- APR 173 - Sheet Metal Formulas 4 Credit(s)
- APR 185 - Shielded Metal Arc Welding 1 1-4 Credit(s) (take 1 credit of APR 185)
- APR 186 - Wire Drive Welding 1 1-4 Credit(s) (take 2 credits of APR 186)
- 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)

### Program Electives

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)
- 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 103 - Sustainability in The Built Environment 3 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 1-4 Credit(s)
- WLD 122 - Shielded Metal Arc Welding 2 1-4 Credit(s)
- 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.

### Journeyman card from Oregon BOLI (22 credits)

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 the equivalent of 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:** Two years, 91 credits

### Program Contacts

Offered by the Social Science Division

Program Coordinator: Caoimhin OFearghail, [ofearghail@lanec.edu](mailto:ofearghail@lanec.edu), 541.463.5361

Academic Advising Team: [socsci-llcprograms@lanec.edu](mailto:socsci-llcprograms@lanec.edu), drop-in advising calendar [lanec.edu/advising/drop-advising](http://lanec.edu/advising/drop-advising); 541.463.3800

Cooperative Education: [lanec.edu/cooped/contact](http://lanec.edu/cooped/contact)

### Estimated Cost: \$13,830

- Books/Course Materials - \$1,450
- Resident Tuition and General Student Fees - \$12,380

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 [lanec.edu/esfs/credit-tuition](http://lanec.edu/esfs/credit-tuition).

### 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:

- Apply sociological theory to better understand criminal behavior.
- Describe the dynamics of interviews and interrogations in investigations.

- Explain the nature of public safety career paths and their own qualifications for various careers in criminal justice.
- Express a thorough knowledge of the criminal justice system.
- Formulate questions that can be addressed with data and collect, organize and display relevant data to answer them.
- Meet the educational requirements for some entry-level public safety careers.
- Understand the importance of interdisciplinary knowledge and the need for a well-rounded education in public safety.
- Use appropriate library and information resources to research professional issues and support lifelong learning.

## 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 counts 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

#### 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 Credit(s)

##### Psychology Track (7 credits) - 2 courses:

- PSY 201 - General Psychology 4 Credit(s)
- PSY 239 - Introduction to Abnormal Psychology 3 Credit(s)

##### Sociology Track (8 credits) - 2 courses:

- SOC 205 - Social Stratification and Social Systems 4 Credit(s)
- 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 Credit(s)
- 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 the Science/Math/Computer Science list.

## Program Core Courses

PROGRAM CORE courses must be completed with a letter 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 12 credits, selected from the following:**

- 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)

## 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.
- Students using lower-credit courses to meet General Education requirements may need to take additional Electives to meet the 90-credit minimum.

## Culinary Arts and Food Service Management, AAS

### Program Suspended

For students currently enrolled in the program, please contact Academic Advising at [culinaryhospprograms@lanecc.edu](mailto:culinaryhospprograms@lanecc.edu) for information about completing the program in a timely manner.

## Cybersecurity, AAS

**Length:** Two years, 90 credits

### Program Contacts

Offered by the Computer Information Technology Department

Program Coordinator: Don Easton, [eastond@lanecc.edu](mailto:eastond@lanecc.edu), 541.463.5532

Cooperative Education: [lanecc.edu/cooped/contact](http://lanecc.edu/cooped/contact)

### Estimated Cost: \$15,042

- Books/Course Materials - \$476
- Books/Class Fees - \$22
- Computers/Internet Service - \$1,500
- Program-Specific Fees - \$208
- Resident Tuition and General Student Fees - \$10,974
- Technology Fees - \$837
- Other Student Fees - \$1,024

Tuition and fee estimates are based on the prior academic year's rates. Course fees may change during the year. Learn more and view updated tuition and fee information at [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

## 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:**

- Defend systems against unauthorized access, modification, and/or destruction
- Perform vulnerability and networking scanning assessments
- Monitor network traffic for unusual activity
- Configure and support security tools such as firewalls, anti-virus software, patch management systems, etc.
- Implement network security policies, application security, access control and corporate data safeguards
- Analyze and establish security requirements for your networks
- Train fellow employees in security awareness and procedures
- Develop and update business continuity and disaster recovery protocols
- Conduct security audits and make policy recommendations
- Gain fundamental knowledge of key compliance frameworks
- Provide technical security advice

**Program Requirements**

**General Education**

GENERAL EDUCATION 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:**

- CS 290 - Ethical Hacking Fundamentals
- 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)

**Program Core Courses**

The following Program Core courses must be completed with a letter grade of C- 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.

- 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 161C - Computer Science 1 4 Credit(s)
- CS 162C - Computer Science 2 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 260 - Data Structures 1 4 Credit(s)
- CS 273 - Introduction to Virtualization and Cloud Computing 4 Credit(s)
- CS 275 - Basic Database SQL 4 Credit(s)

- CS 288 - Network Monitoring and Management 4 Credit(s)

**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' taking their first programming language (C, N, or P) will take CS 161/162. Because CS 161/162 are not repeatable courses, upon taking a second programming language, students must use the CS 133/233 course numbers. CS 161/162 are the courses listed in catalog degree requirements but CS 133/233 will be accepted as well. For help with this, contact the department or academic advisors.

**Dental Hygiene, AAS**

**Length:** Two years, 91 credits

**Program Prerequisites:** 54 credits

**Program Contacts**

Offered by Health Professions

Program Coordinator: Sharon Hagan RDH, M.S., [hagans@lanecc.edu](mailto:hagans@lanecc.edu), 541.463.5616

Health Professions Academic Advising Team: [DHPProgram@lanecc.edu](mailto:DHPProgram@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

**Estimated Cost:** \$36,393

- Books - \$1,600
- Certification, Licensure, Exams, Physicals - \$2,560
- Computers/Internet Service - \$1,500
- Differential Fees\* - \$12,933
- Instruments/Tools - \$6,300
- Residential Tuition General Fees - \$11,500

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition). \*This is the total of all the differential fees attached to the courses in this 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:**

- 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
- Demonstrate critical thinking, problem solving and self-evaluation in the provision of comprehensive care, selection of patient management strategies, and professional competence development
- 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
- Access, critically appraise, apply and communicate evidence based

practices for all periodontal classifications within diverse patient populations

- Demonstrate interpersonal communication and collaborative skills to effectively interact with diverse population groups, health care providers, dental professionals and community groups
- Demonstrate application of refined instrumentation skills for periodontal, restorative and therapeutic interventions for individuals at all stages of life
- Demonstrate application of behavioral sciences and patient centered approaches to promote, improve and maintain oral health
- 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
- Demonstrate use of mathematical and statistical concepts in the application of clinical and preventive dental care strategies
- 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 [lanec.edu/hp/dental/dental-hygiene](http://lanec.edu/hp/dental/dental-hygiene) for program information and the admission application packet.

## Program Requirements

### Prerequisites

**Program Prerequisites** must be completed with a letter grade of C or better. P/NP is not accepted. All prerequisites except BI 233, BI 234 and the second writing requirement must be completed prior to applying for the program. BI 233, BI 234 and the second writing course must be completed prior to beginning the program.

#### 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)
- BI 233 - Human Anatomy and Physiology 3 4 Credit(s) (BI 233 must be completed prior to beginning program.)

#### 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)
- Any 100- or 200-level Sociology course

#### 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)
- Any 100- or 200-level Psychology course

#### Oral Communications (4 credits) - Complete one of the following:

- COMM 100 - Basic Communications 4 Credit(s)
- COMM 111 - Fundamentals of Public Speaking 4 Credit(s) (or COMM 111\_H)

#### Health (4 credits) - Complete the following:

- FN 225 - Nutrition 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. DH 120A satisfies the Human Relations requirement and may not be substituted. **BI 234 and writing must be completed prior to beginning program.**

- BI 234 - Introductory Microbiology 4 Credit(s)
- WR 123 - Composition: Research Writing 4 Credit(s) or WR 227 / WR 227\_H
- 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 Credit(s)
- DH 234 - Trends and Issues in Dental Hygiene 2 Credit(s)
- DH 254 - Pharmacology 3 Credit(s)

#### Clinical Dental Hygiene (42 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 6 Credit(s)
- DH 222A - Clinical Dental Hygiene 6 2 Credit(s)
- DH 222B - Clinical Dental Hygiene 6 Lab 5 Credit(s)

#### Community Dental Health (3 credits):

- DH 237 - Community Dental Health 3 Credit(s)
- DH 238 - Community Dental Health 1 Credit(s)

#### Oral Radiology (5 credits):

- DH 243A - Oral Radiology 2 Credit(s)
- DH 243B - Oral Radiology 1 Credit(s)
- DH 244A - Oral Radiology 1 Credit(s)
- DH 244B - Oral Radiology 1 Credit(s)

#### Periodontology (4 credits):

- DH 270 - Periodontology 1 2 Credit(s)
- DH 271 - Periodontology 2 1 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:** Two Years, 93 credits

### Program Contacts

Offered by: Advanced Technology Division

Program Coordinator: Tracy Rea, [reat@lanec.edu](mailto:reat@lanec.edu), 541.463.5151

Advanced Technology Academic Advising Team: [advtechprograms@lanec.edu](mailto:advtechprograms@lanec.edu); drop-in advising calendar [lanec.edu/advising/drop-advising](http://lanec.edu/advising/drop-advising); 541.463.3800

Cooperative Education: [lanec.edu/cooped/contact](http://lanec.edu/cooped/contact)

**Estimated Cost: \$22,021**

- Books - \$2,155
- Differential Fees - \$3,007

- Instruments/Tools - \$400
- Program-Specific Fees - \$1,691
- Resident Tuition and General Student Fees - \$14,768

Tuition and fee estimates are based on the prior academic year's rates. Course fees may change during the year. Learn more and view updated tuition and fee information at [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition). \*This is the total of all the differential fees attached to the courses in this 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:**

- Access library, computing, and communications services to obtain information and data
- Demonstrate math skills to find force, pressure, area, volume, horse power, torque, gear ratios and precision measurement
- Identify and explain technologies used in trucking, construction, logging, agriculture equipment, generators and marine applications in the following subjects:
  - Diesel Fuel Systems
  - Diesel Brake Systems
  - Diesel Powertrain and Chassis Systems
  - Diesel Hydraulic Systems
  - Diesel Electrical/Electronic Systems
  - Diesel HVAC Systems
  - Diesel Engines
- Identify and apply industry safety standards in a work environment
- Use industry tools and equipment to demonstrate, diagnose, service, repair, testing, disassembly, failure analysis, assembly and operation

## Program Requirements

### General Education

GENERAL EDUCATION 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)

### 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 and

- WLD 143 - Wire Drive Welding 1 and
- WLD 122 - Shielded Metal Arc Welding 2 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 is the parent program for the Diesel Technology, 2-yr Certificate
- This program follows Associate of Applied Science (AAS) Requirements unless otherwise specified
- 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:** Two years, 90 credits

### Program Contacts

Offered by: Advanced Technology, [lanecc.edu/advtech](http://lanecc.edu/advtech)

Program Coordinator: Tracy Rea, [reat@lanecc.edu](mailto:reat@lanecc.edu), 541.463.5151

Advanced Technology Academic Advising: [AdvTechPrograms@lanecc.edu](mailto:AdvTechPrograms@lanecc.edu)

**Estimated Cost: \$15,120**

- Books: \$1,834
- Program-Specific Fees: \$423
- Resident Tuition and General Student Fees: \$12,863

Tuition and fee estimates are based on the prior academic year's rates. Course fees may change during the year. Learn more and view updated tuition and fee information at [lanecc.edu/esfs/credittuition](http://lanecc.edu/esfs/credittuition).

## 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:**

- Demonstrate basic competence in the use of CAD, solid modeling, and building information modeling software.
- Visualize three-dimensional objects from multiple viewing directions and translate three-dimensional objects into two-dimensional drawings.
- Create mechanical and architectural drawings which follow recognized national standards for format, annotation, lines, and symbols.
- Demonstrate basic familiarity with building systems, materials, methods, and building codes.
- Demonstrate basic understanding of mechanisms and mechanical design strategies.
- Conduct research to solve basic design problems.
- Solve problems and manage projects as part of a team.
- Use quantitative thinking to translate concepts of a problemsolving task into mathematical language and solve using mathematical operations.
- Communicate clearly in written, verbal, and graphic formats.

## Program Requirements

### General Education

GENERAL EDUCATION 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)

**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 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)
- DS 155 - Heavy Equipment Hydraulics 1-12 Credit(s) (take 1 credit of DS 155)
- ET 121 - Shop Practices 2 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 10-12 credits selected from the following:**

- ART 117 - Basic Design: 3-Dimensional 3 Credit(s)
- ART 216 - Digital Design Tools 3 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)
- CS 179 - Introduction to Computer Networks 4 Credit(s)
- CST 116 - Construction Estimating 4 Credit(s)
- CST 201 - Sustainable Building Practices 3 Credit(s)
- DS 154 - Heavy Duty Braking 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)
- GIS 151 - Digital Earth 4 Credit(s)
- GIS 245 - GIS 1 4 Credit(s)
- MFG 101 - Safety and Basic Shop Practice 3 Credit(s)
- MUL 101 - Introduction to Media Arts 3 Credit(s)

- MUL 212 - Digital Imaging 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)
- PH 201 - General Physics 5 Credit(s)
- PH 202 - General Physics 5 Credit(s)
- PH 203 - General Physics 5 Credit(s)
- WLD 143 - Wire Drive Welding 1 1-4 Credit(s)
- WLD 151 - Fundamentals of Metallurgy 1-3 Credit(s)

## Notes

- This is the parent program for: Drafting, 1-yr Certificate
- This program follows Associate of Applied Science (AAS) Requirements
- 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 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.
- Students using lower-credit courses to meet General Education requirements may need to take additional Electives to meet the 90 credit minimum.

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## Dual-Degree Option for Culinary Arts Students/Graduates

### Program Suspended

For students currently enrolled in the program, please contact Academic Advising at [culinaryhospprograms@lanecc.edu](mailto:culinaryhospprograms@lanecc.edu) for information about completing the program in a timely manner.

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## Early Childhood Education, AAS

**Length:** Two years, 90 credits

### Program Contacts

Offered by the Social Science Division

Program Coordinator: Kathleen Lloyd, [lloydk@lanecc.edu](mailto:lloydk@lanecc.edu), 541.463.5287

Academic Advising Team: [EducationAdvising@lanecc.edu](mailto:EducationAdvising@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

Cooperative Education: Kathleen Lloyd, [lloydk@lanecc.edu](mailto:lloydk@lanecc.edu), 541.463.5287; [lanecc.edu/cooped](http://lanecc.edu/cooped)

### Estimated Cost: \$10,600

- Books/Course Materials - \$1,800
- Program-Specific Fees - \$150
- Resident Tuition and General Student Fees \$8,650

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

## 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, policy makers and advocates.

### Students who complete this program will be able to:

- Design and implement a Reggio-inspired curriculum approach for children to learn to make appropriate choices and actively participate in their own learning.
- Apply age-appropriate guidance strategies so children develop empathy, moral autonomy, self-worth and the ability to self-regulate in challenging situations.
- Use basic mathematics in everyday life and business transactions, including measurement, introduction of probability and statistics, reading graphs and tables, and signed numbers.
- Develop and apply research skills to access information using print and on-line resources, including the library catalog and reference sources
- Administer and manage the day to day operations of child care programs and work effectively with children and families.

## Admission Information

To apply for this program, view the application and information about how to apply at [lanec.edu/socialscience/early-childhood-education](http://lanec.edu/socialscience/early-childhood-education)

## Program Requirements

### General Education

GENERAL EDUCATION 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)

#### 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-LCC Child-Care Center 4 Credit(s)

Cooperative Education - Complete 6 credits of the following:

- ED 280EC - Co-op Ed: Early Childhood Education 1-7 Credit(s)

## Program Electives

PROGRAM ELECTIVES must be completed with a grade of C- or better, or Pass.

#### Complete 12 credits from the following:

- ART 111 - Introduction to Visual Arts 3 Credit(s)
- ART 250 - Ceramics: Hand Building 3 Credit(s)
- ART 261 - Photography 1 3 Credit(s)
- ASL 101 - 1st Year American Sign Language 4 Credit(s)
- ASL 102 - 1st Year American Sign Language 4 Credit(s)
- ASL 103 - 1st Year American Sign Language 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 102E - General Biology-Animal Biology 4 Credit(s)
- BI 103A - General Biology-Birds of Oregon 4 Credit(s)
- BI 103F - General Biology-Wildflowers of Oregon 4 Credit(s)
- CIS 101 - Computer Fundamentals 4 Credit(s)
- COMM 111 - Fundamentals of Public Speaking 4 Credit(s) or COMM 111\_H
- COMM 112 - Persuasive Speech 4 Credit(s)
- COMM 218 - Interpersonal Communication 4 Credit(s)
- CS 120 - Concepts of Computing: Information Processing 4 Credit(s)
- ED 100 - Introduction to Education 3 Credit(s)
- ED 200 - Foundations of Education Seminar 3 Credit(s)
- ED 258 - Multicultural Education 3 Credit(s)
- ED 269 - Inclusion and Special Needs 3 Credit(s)
- EL 115R - Critical Thinking for College Reading 3 Credit(s)
- EL 116 - Critical Thinking for Paragraph Writing 3 Credit(s)
- EL 117 - Critical Thinking for Essay Writing 3 Credit(s)
- ENG 100 - Children's Literature 4 Credit(s)
- ES 101 - Historical Racial and Ethnic Issues 4 Credit(s)
- ES 244 - Native American Leadership 1: Building Leadership Through Indigenous Oratory 4 Credit(s)
- GEOG 141 - Natural Environment 4 Credit(s)
- HST 266 - US Women's History 4 Credit(s)
- HUM 100 - Humanities Through the Arts 4 Credit(s)
- MTH 060 - Beginning Algebra 4 Credit(s) or higher-level Math course
- MUS 101 - Music Fundamentals 3 Credit(s)
- MUS 131 - Group Piano 2 Credit(s)
- MUS 134 - Group Voice 2 Credit(s)
- PHL 201 - Ethics 4 Credit(s)
- PHL 221 - Critical Thinking 4 Credit(s)
- PS 213 - Peace and Conflict Studies: Local 4 Credit(s)
- PSY 110 - Exploring Psychology 3 Credit(s)
- PSY 201 - General Psychology 4 Credit(s)
- PSY 215 - Lifespan Developmental Psychology 4 Credit(s)
- SLD 111 - Chicano/Latino Leadership 1: Quien Soy? Quienes 4 Credit(s)
- SOC 204 - Introduction to Sociology 4 Credit(s) or SOC 204\_H
- SOC 205 - Social Stratification and Social Systems 4 Credit(s)
- SOC 210 - Marriage, Family, and Intimate Relations 4 Credit(s)
- SPAN 101 - Spanish, First-Year 5 Credit(s)
- SPAN 102 - Spanish, First-Year 5 Credit(s)
- SPAN 103 - Spanish, First-Year 5 Credit(s)
- 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

## 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, Guidance and Curriculum, CPC, and Infant and Toddler, CPC
- Some ECE and HDFS courses are offered through College Now at high schools in Lane County and outlying areas. For more information, see [lanec.edu/hscconnections/collegenow/courses-high-school](http://lanec.edu/hscconnections/collegenow/courses-high-school)
- Students who do not meet reading and/or math requirements may apply to PASS Lane for alternative admission process. Contact Marcia Koenig ([koeningm@lanec.edu](mailto:koeningm@lanec.edu)) 541.463.5818, Bldg 11/244.
- Transfer Credit for Prior Learning may be granted based on OCCD Oregon Registry Steps. See Program Coordinator for information.
- 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 in the LCC child care center. Please contact the Program Coordinator, Kathleen Lloyd, 541.463.5527.
- Cooperative Education (Co-op). Contact Kathleen Lloyd, [lloydk@lanec.edu](mailto:lloydk@lanec.edu); 541.463.5527. 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 work sites and schedules vary.

## Electrician Apprenticeship Technologies, AAS

**Length:** 90 credits

### Program Contacts

Offered by the Advanced Technology department

Program Coordinator: Joy Crump, [crumpj@lanecc.edu](mailto:crumpj@lanecc.edu), 541.463.5496

Academic Advising Team: [advtechprograms@lanecc.edu](mailto:advtechprograms@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

### Estimated Cost: \$13,948

- Books/Materials - \$1,750
- Resident Tuition and General Student Fees - \$12,198

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

## 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:

- Perform the duties and responsibilities of the electrician trade/occupation.
- Apply theory to electrical wiring.
- Demonstrate and use industry safety standards.
- Develop attitudes conducive to improve customer relations skills in the electrician trade.
- Develop communication and critical thinking skills necessary for job advancement.
- Use appropriate library and information resources to research professional issues and support lifelong learning.
- Access library, computing, and communications services, and appropriately select information and data from regional, national, and international networks.
- Represent, analyze and determine rules for finding patterns relating to linear functions, non-linear functions and arithmetic sequences with tables, graphs, and symbolic rules.
- Adapt to new job requirements to qualify for advancement in becoming lead supervisors.
- 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 EDUCATION 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), choose 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)

## Program Core Courses

Complete all courses listed in one of the following trades. 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 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)

### 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 credits)

- APR 189 - Shop Practices 2 Credit(s)
- 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 2 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)

### Manufacturing Plant Electrician (40 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)
- 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)



## Program Electives

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)
- DRF 160 - Computer-Aided Drafting and Design 4 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 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.

## Journeyman card from Oregon BOLI (22 credits)

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 the equivalent of 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.
- 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 (online), AAS

**Length:** Two years, 91 credits

### Program Contacts

Offered by the Science Division

Program Coordinator: Roger Ebbage, [ebbager@lanecc.edu](mailto:ebbager@lanecc.edu), 541.463.6160

Academic Advising Team: [Sci-MathPrograms@lanecc.edu](mailto:Sci-MathPrograms@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

Cooperative Education: [lanecc.edu/cooped/contact](http://lanecc.edu/cooped/contact)

**Estimated Cost: 13,198**

- Program-Specific Fees - \$1,000

- Resident Tuition and General Student Fees - \$12,198

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

## Learning Outcomes

The purpose of this program is to prepare students for a career in Energy Management. Through this online program, students will learn how residential and commercial building systems consume energy by understanding how they 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. Employment is found with Government, Utilities, Engineering Firms, School Districts, Community Action Programs, and Residential Weatherization Practitioners!

**Students who complete this program will be able to:**

- Evaluate the energy use patterns for residential and commercial buildings and recommend energy efficiency measures and renewable energy solutions for high energy consuming buildings.
- Understand the interaction between energy consuming building systems and make energy use reduction recommendations based on that understanding.
- Construct energy evaluation technical reports and make presentations for potential project implementation.
- Access library, computing and communications services, and obtain information and data from regional, national, and international networks.
- Collect and display data as lists, tables, and plots using appropriate technology (e.g., excel and other computer software).
- Develop and evaluate inferences and predictions that are based on collected data.
- Interpret the concepts of a problem-solving task, and, using mathematics, translate concepts into energy related projects.
- Use appropriate library and digital information resources to research professional objectives and support lifelong learning.
- Read and analyze building blue prints including floor, mechanical, and electrical plans.
- Read elevations, sections, schedules, and construction notes.

## Admission Information

Apply online at [lanecc.edu/science/energy-management](http://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 the following requirements be completed prior to entering the program.

**Writing (8 credits). Complete both of the following:**

- WR 121 - Academic Composition 4 Credit(s) or WR 121\_H or higher
- WR 227 - Technical Writing 4 Credit(s) or WR 227\_H

**Math (5 credits). Complete one course.**

- MTH 098 - Math Literacy 5 Credit(s) (recommended) or MTH 095 - Intermediate Algebra 5 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)

**Science/Math/CS (8 credits). Complete the following two courses:**

- PH 101 - Fundamentals of Physics 4 Credit(s)
- PH 102 - Fundamentals of Physics 4 Credit(s)

## Program Core Courses

CORE courses must be completed with a letter 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)

- CST 110 - Blueprint Reading 1 3 Credit(s)
- NRG 101 - Introduction to Energy Management 3 Credit(s)
- NRG 103 - Sustainability in The Built Environment 3 Credit(s)
- NRG 110 - Energy Efficiency Industry Software Applications 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)
- 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 154 - Alternative Energy Technologies 3 Credit(s)
- WATR 202 - Fostering Sustainable Practices 3 Credit(s)

## Cooperative Education

COOPERATIVE EDUCATION course must be completed with a grade of C- or better, or Pass.

**Complete 6 credits of NRG 280 - Co-op Ed: Energy Management**

## Program Electives

ELECTIVES must be completed with a grade of C- or better, or Pass. ELECTIVES may be completed online, on campus, or transferred from another institution. Only one co-op ed seminar (BT 206, COOP 206, CS 206) may be used to meet this requirement.

**Required: Complete 8 credits from the list below.**

**Required: Complete an additional 3 credits, any course(s), 100-level or higher.**

- BA 101 - Introduction to Business 4 Credit(s)
- BT 223 - MS EXCEL for Business-Expert 4 Credit(s)
- COMM 100 - Basic Communications 4 Credit(s)
- COMM 105 - Listening and Critical Thinking 4 Credit(s)
- COMM 111 - Fundamentals of Public Speaking 4 Credit(s)
- COMM 112 - Persuasive Speech 4 Credit(s)
- COMM 218 - Interpersonal Communication 4 Credit(s)
- DRF 160 - Computer-Aided Drafting and Design 4 Credit(s)
- MTH 105 - Math in Society 4 Credit(s)
- MTH 111 - College Algebra 5 Credit(s) or higher
- NRG 105 - Green Careers Exploration 3 Credit(s)
- NRG 280 - Co-op Ed: Energy Management 3-12 Credit(s) (May take additional Co-op credits)
- PS 297 - Environmental Politics 4 Credit(s)
- PSY 201 - General Psychology 4 Credit(s)
- SUST 101 - Introduction to Sustainability 3 Credit(s)
- Any Water Conservation Technician Course (see Courses for WATR options)
- Any Co-operative Education Seminar (BT 206 COOP 206 CS 206)
- Any Spanish (SPAN) course, 100-level or higher

## 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 098 or MTH 095 may be taken any term but must be completed by the end of the first year.
- WR 121, WR 227, Human Relations, and Electives may be taken any term.
- All NRG courses are offered fully online.
- Lane Community College does not offer PH 101 or PH 102 online. Physics courses 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.
- For transfer opportunities, check with your Academic Advisor. There may be variations in courses needed.
- **Cooperative Education** is a required and important part of the Energy Management 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 must complete six Co-op credits for the AAS degree. Students may use up to eighteen Co-op credits toward their degree requirements. Contact Gerry Meenaghan at [MeenaghanG@lanecc.edu](mailto:MeenaghanG@lanecc.edu)

## Licensing and Certification

Association of Energy Engineers Certified Energy Manager In Training (EMIT)

## Energy Management Technician: Building Controls Technician Option (online), AAS

**Length:** Two years, 96 credits

### Program Contacts

Offered by the Science Division

Program Coordinator: Roger Ebbage, [ebbager@lanecc.edu](mailto:ebbager@lanecc.edu), 541.463.6160

Academic Advising Team: [Sci-MathPrograms@lanecc.edu](mailto:Sci-MathPrograms@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising), 541.463.3800

Cooperative Education: [lanecc.edu/cooped/contact](http://lanecc.edu/cooped/contact)

### Estimated Cost: 13,198

- Program-Specific Fees - \$1,000
- Resident Tuition and General Student Fees - \$12,198

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

## 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:

- Access library, computing and communications services, and obtain information and data from regional, national, and international networks.
- Collect and display data as lists, tables, and plots using appropriate technology (e.g., excel and other computer software).
- Construct energy evaluation technical reports and make presentations for potential project implementation.
- Develop and evaluate inferences and predictions that are based on collected data.
- Evaluate the energy use patterns for residential and commercial buildings and recommend energy efficiency measures and renewable energy solutions for high energy consuming buildings.
- Interpret the concepts of a problem-solving task, and, using mathematics, translate concepts into energy related projects.
- Read and analyze building blue prints including floor, mechanical, and electrical plans.
- Understand the interaction between energy consuming building systems and make energy use reduction recommendations based on that understanding.
- Use appropriate library and information resources to research professional issues and support lifelong learning.
- Analyze a variety of commercial HVAC and lighting systems from a controls perspective.
- Become familiar with modules and electronics commonly used to implement building automation schemes.
- Write building control systems schemes.
- Understand control system management software.
- Diagnose and troubleshoot existing building control systems.

## Admission Information

Apply online at [lanecc.edu/science/energy-management](http://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 the following requirements be completed prior to entering the program.

**Writing (8 credits). Complete both of the following:**

- WR 121 - Academic Composition 4 Credit(s) or WR 121\_H or higher
- WR 227 - Technical Writing 4 Credit(s) or WR 227\_H

**Math (5 credits). Complete one course.**

- MTH 098 - Math Literacy 5 Credit(s) (recommended) or MTH 095 - Intermediate Algebra 5 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)

**Science/Math/CS (8 credits). Complete the following two courses:**

- PH 101 - Fundamentals of Physics 4 Credit(s)
- PH 102 - Fundamentals of Physics 4 Credit(s)

**Program Core Courses**

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 check with 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 103 - Sustainability in The Built Environment 3 Credit(s)
- NRG 110 - Energy Efficiency Industry Software Applications 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)
- 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 133N - Beginning Programming: C# 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 098 or MTH 095 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.
- Lane Community College does not offer PH 101 or PH 102 online. Physics courses 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.
- For transfer opportunities, check with your Academic Advisor. There may be variations in courses needed.
- **Cooperative Education** is a required and important part of the Energy Management 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 must complete six Co-op credits for the AAS degree. Students may use up to eighteen Co-op credits toward their degree requirements. Contact Gerry Meenaghan at [MeenaghanG@lanec.edu](mailto:MeenaghanG@lanec.edu)

**Licensing and Certification**

Association of Energy Engineers Certified Energy Manager In Training (EMIT)

**Fabrication/Welding Technology, AAS**

**Length:** Two years, 90 credits

**Program Contacts:**

Offered by: Advanced Technology, [lanec.edu/advtech](http://lanec.edu/advtech)

Program Coordinator: Tracy Rea, [reat@lanec.edu](mailto:reat@lanec.edu), 541.463.5151

Advanced Technology Academic Advising: [AdvTechPrograms@lanec.edu](mailto:AdvTechPrograms@lanec.edu)

**Estimated Cost: \$19,077**

- Books: \$1,446
- Tools: \$845
- Program-Specific Fees: \$3,288
- Resident Tuition and General Student Fees: \$13,498

Tuition and fee estimates are based on the prior academic year's rates. Course fees may change during the year. Learn more and view updated tuition and fee information at [lanec.edu/esfs/credit-tuition](http://lanec.edu/esfs/credit-tuition).

**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:**

- Apply knowledge of forming, fitting, and welding processes.
- Demonstrate entry-level fabrication techniques and welding processes and application including GTAW, structural and pipefitting, metallurgy, and quality control procedures.
- Use appropriate library and information resources to research professional issues and support lifelong learning.
- Use blueprint-reading skills, cost estimating, applied science of materials, and mathematics necessary to the profession.
- Demonstrate and use industry safety standards.
- Use mathematical formulas to calculate area, volume, and weight of metal objects.

**Program Requirements****General Education**

GENERAL EDUCATION 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)

**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.

- MFG 101 - Safety and Basic Shop Practice 3 Credit(s)
- 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)

## Program Electives

**Complete 5 credits of Program Electives, selected from the 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.

- COOP 206 - Co-op Ed: Internship Seminar 1-2 Credit(s)
- DRF 160 - Computer-Aided Drafting and Design 4 Credit(s)
- ENGR 280W - Co-op Ed: Welding 3-12 Credit(s)
- MTH 060 - Beginning Algebra 4 Credit(s)
- MTH 075 - Applied Algebra for Technicians 4 Credit(s)
- Any Math course higher than MTH 075
- WLD 111 - Blueprint Reading for Welders 3 Credit(s)
- WLD 121 - Shielded Metal Arc Welding 1 1-4 Credit(s)
- WLD 122 - Shielded Metal Arc Welding 2 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)
- WLD 142 - Pipe Welding Lab: Carbon Steel 3 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)

## Notes

- This is the parent program for the Fabrication/Welding, 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. 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. 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 your Academic Advisor for help with transfer to OIT.

## Flight Technology, AAS

**Length:** Two years, 93 credits

### Program Contacts

Offered by Lane Aviation Academy

Program Coordinator: Paul Lancaster, Director of Flight Training, [LancasterP@lanecc.edu](mailto:LancasterP@lanecc.edu), 541.463.4316

Academic Advising Team: [advtechprograms@lanecc.edu](mailto:advtechprograms@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

### Estimated Cost for Standard Track: \$79,783

This track includes students under 180 lbs, under 6'2", under 39" sitting height.

- Books - \$1,800
- Certification, Licensure, Exams, Physicals - \$2,500
- Instruments/Tools - \$300
- Flight Fees - \$62,604
- Resident Tuition and General Student Fees - \$12,579

### Estimated Cost for W Track: \$81,345

This track includes students at or above 180 lbs, over 6'2", over 39" sitting height

Books - \$1,800

- Certification, Licensure, Exams, Physicals - \$2,500
- Instruments/Tools - \$300
- Flight Fees - \$64,166
- Resident Tuition and General Student Fees - \$12,579

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

## Learning Outcomes

The purpose of this program is to prepare students for successful careers as pilots in the air transportation industry.

### Students who complete this program will:

- Be certificated by the FAA as commercial pilot with an option for being FAA certified as a Flight Instructor.
- Have FAA pilot certification and be legally qualified for an entry-level position in the commercial aviation industry.
- Have knowledge and skills to serve in responsible positions in a corporate aviation department.
- Be skilled in the use of multiple industry libraries and data base systems and be skilled as a researcher in the aviation industry.
- Be skilled in the use of various systems of measure and conversion; be skilled in the use of performance tables and graphs; plot data manually and electronically to determine performance and trends.
- Skillfully access a multitude of library accessible resources for applications information and topical research projects; be skilled in the use of local and national libraries and databases.
- Accurately use systems of measure, skillfully perform unit conversions, and be skilled in computational analysis defining airplane operational performance; accurately use performance tables, charts and graphs; use interpolation to derive implied values; and be skilled in the use of aviation specific manual and electronic calculators to determine time, rate and trends.

## Admission Information

To apply, contact the Lane Aviation Academy at [lanecc.edu/aviationacademy](http://lanecc.edu/aviationacademy) or 541.463.4195.

## Program Requirements

### General Education

**General Education** 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 098 - Math Literacy 5 Credit(s)
- MTH 060 - Beginning Algebra 4 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. FT 255 satisfies the Human Relations requirement and may not be substituted.

**Private Pilot flight labs** are to be chosen based on student size. Students under 180 lbs, under 6'2", under 39" sitting height must complete FT 141, FT 142, and FT 143. Students at or above these limits must complete FT 141W, FT 142W, and FT 143W.

- BA 254 - General Aviation Management 3 Credit(s)
- FT 102 - General Aviation Careers 1 Credit(s)
- FT 103 - Aircraft Safety Development 4 Credit(s)
- FT 115 - Aircraft Structures and Systems 3 Credit(s)
- FT 250 - Private Pilot Ground School 5 Credit(s)
- FT 252 - Instrument Ground School 4 Credit(s)
- FT 251 - Commercial Pilot Ground School 4 Credit(s)
- FT 228 - Multiengine Ground School 2 Credit(s)
- FT 256 - Flight Instructor-Airplane and Instrument Flight Instructor-

Airplane Ground School 3 Credit(s)

- FT 254 - Aerodynamics 3 Credit(s)
- FT 255 - Fundamentals of Instruction and Human Factors 3 Credit(s)
- FT 261 - Air Traffic Control and Airspace 1 Credit(s)
- FT 262 - Aviation Law and Regulations 1 Credit(s)
- GS 109 - Meteorology 5 Credit(s)

Certified Flight Instructor (3 credits)

- FT 271 - Part 61 Certified Flight Instructor/Instrument Instructor Ground Training 2 Credit(s)
- FT 272 - Part 61 Certified Flight Instructor/Instrument Instructor Flight Training 1 Credit(s)

Flight Labs (41 Credits)

- FT 141 / FT 141W - Pt 141 Private Pilot Stage 1 Pre-solo Flight and Ground Lecture 6 Credit(s)
- FT 142 / FT 142W - Pt 141 Private Pilot Stage 2 Post-solo Flight and Ground Lecture 3 Credit(s)
- FT 143 / FT 143W - Pt 141 Private Pilot Stage 3 Cross-country and Certification prep Flight and Ground Lecture 3 Credit(s)
- FT 201 - Pt 141 Instrument Rating Stage 1 Altitude Instrument Flying and Basic Instrument Navigation 4 Credit(s)
- FT 202 - Pt 141 Instrument Rating Stage 2 Holding and Instrument Approaches 5 Credit(s)
- FT 203 - Pt 141 Instrument Rating Stage 3 Instrument Cross-country and Certification Prep 3 Credit(s)
- FT 221 - Pt 141 Commercial Pilot Stage 1 Ground and Airborne Lecture with solo lab 3 Credit(s)
- FT 222 - Pt 141 Commercial Pilot Stage 2 Ground and Airborne Lecture with solo lab 3 Credit(s)
- FT 223 - Pt 141 Commercial Pilot Stage 3 Ground and Airborne Lecture 2 Credit(s)
- FT 224 - Pt 141 Commercial Pilot Stage 4 Ground and Airborne Lecture 4 Credit(s)
- FT 225 - Pt 141 Commercial Pilot Stage 5 Ground and Airborne Lecture with Solo Lab 5 Credit(s)

**Electives (optional)**

- FT 123 - Commercial UAS Ground School 1 Credit(s)
- FT 124 - UAS Flight Lab 1-6 Credit(s)
- FT 249 - Part 61 Pilot Flight Lab 1-7 Credit(s)
- FT 280 - Co-op Ed: Flight Tech 3-12 Credit(s)

## Notes

- A VIB (Veterans Information Bulletin) with current program costs is provided in Flight Technology's initial Application Packet.
- Graduates considering transfer to a 4-year College or University should see their Academic Advisor.
- FT 141W, FT 142W and FT 143W are flown in a 4-seat aircraft (W=Warrior), which has a higher rental cost than the 2-seat aircraft used for FT 141, FT 142 and FT 143.
- 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.

## Licensing and Certification

Flight Technology Private Pilot, Instrument and Commercial Flight Training is approved for Part 141 by the Federal Aviation Administration (FAA)

After successful completion of the college courses and completion of the subsequent FAA practical tests, the student will receive FAA Private Pilot, Instrument Rating and Commercial Pilot Certificates.

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## Graphic Design, AAS

**Length:** Two years, 90 credits

### Program Contacts

Offered by the Division of the Arts

Program Coordinator: Contact the Division, Bldg. 11, Room 101, 541.463.5411

Media Arts Academic Advising Team: [ArtsPrograms@lanecc.edu](mailto:ArtsPrograms@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

Cooperative Education: [lanecc.edu/cooped/contact](http://lanecc.edu/cooped/contact)

### Estimated Cost: \$14,151

- Instruments/Tools - \$1,500
- Resident Tuition and General Student Fees - \$12,651

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

## 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:**

- Design a variety of graphic materials including advertising, corporate identity, publications, packaging, signage, marketing, and web graphics.
- Solve graphic communication problems through the use of computer technology used in the field.
- Demonstrate understanding of fundamental art, communication, and marketing principles in the development of design solutions.
- Demonstrate understanding of professional business standards and practices.
- Demonstrate ability to design and produce materials that will meet professional standards for reproduction.
- Use appropriate library and information resources to research design problems, issues, and technology, as well as, to support lifelong technical learning.

## Admission Information

This program is open admission for the first year, but admission is limited for second year. For more information, go to [lanecc.edu/mediaarts/graphicdesign/second-year-graphic-design-program](http://lanecc.edu/mediaarts/graphicdesign/second-year-graphic-design-program).

## Program Requirements

### General Education

**General Education** 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)

## Program Core Courses

All of the following courses must be completed with a letter grade of B- or better. P/NP is not accepted.

- 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)
- GD 110 - Introduction to Graphic Design 1 Credit(s)
- MUL 212 - Digital Imaging 4 Credit(s)

Drawing 1 (3 credits) - Complete the following:

- ART 131 - Introduction to Drawing 3 Credit(s)

Graphic Design and Production (15 credits):

- ART 221 - Graphic Design 1 4 Credit(s)
- ART 222 - Graphic Design 2 4 Credit(s)
- ART 227 - Graphic Design Production 1 3 Credit(s)
- ART 228 - Graphic Design Production 2 4 Credit(s)

All of the following courses must be completed with a letter grade of C- or better. P/NP is not accepted.

- ART 290 - Design Concepts for the Web 3 Credit(s)
- MUL 105 - Digital Photography 4 Credit(s)
- MUL 205 - Design Studio 3 Credit(s)
- MUL 220 - Intermediate Typography 3 Credit(s)
- MUL 227 - Graphic Design Literacy 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 245 - Drawing for Media 4 Credit(s)

Graphic Design and Production (8 credits):

- ART 223 - Graphic Design 3 4 Credit(s)
- ART 229 - Graphic Design Production 3 4 Credit(s)

## Cooperative Education

**Cooperative Education** must be completed with a letter grade of C- or better. P/ NP is not accepted. **Complete 6 credits of Cooperative Education.**

- ART 280GD - Co-op Ed: Graphic Design 3-12 Credit(s)

## Electives

**Program Electives** must be completed with a letter grade of C- or better. P/ NP is not accepted. **Complete 5 credits of Program Electives.** Choose any combination of courses from the following subject list (see complete course listing for information 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. 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. A minimum of six credits of Co-op in graphic design is required for completion of the graphic design program. Contact Teresa Hughes, Graphic Design Cooperative Education Coordinator, Bldg. 17, Rm. 106, 541.463.3179, [hughest@lanecc.edu](mailto: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.

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## Health Information Management (online), AAS

**Length:** Two years, 90 credits

**Program prerequisites:** 21 credits

### Program Contacts

Offered by the Health Professions Division

Program Coordinator: Shelley Williams, BA, RN, RHIT; [williamssk@lanecc.edu](mailto:williamssk@lanecc.edu); 541.463.5182

Health Information Management Academic Advising Team: [HIMProgram@lanecc.edu](mailto:HIMProgram@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

Cooperative Education: [lanecc.edu/cooped/contact](http://lanecc.edu/cooped/contact)

### Estimated Cost: \$15,249

- Books/Course Materials - \$2,100
- Certification, Licensure, Exams, Physicals - \$450
- Computers/Internet Service - \$1,500
- Technology Fees - \$54
- Online Course Fees - \$525
- Resident Tuition and General Student Fees - \$11,199

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

## 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:**

- Apply critical and creative thinking, problem solving, and effective inter-professional communication skills related to health information management.
- Apply principles of healthcare privacy, confidentiality, legal, ethical issues and data security.
- Apply quantitative and qualitative methodologies to process healthcare information.
- Demonstrate knowledge of dynamic healthcare delivery systems and regulatory environments.
- Demonstrate knowledge of healthcare billing, coding and reimbursement policies.
- Demonstrate knowledge of healthcare terminology and medical conditions.
- Evaluate, use, and integrate information technology to support medical decision making and processes.
- Demonstrate the application of information technology in the HIM environment.
- 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 [lanecc.edu/hp/him/admissions-and-application](http://lanecc.edu/hp/him/admissions-and-application)

## Program Requirements

### Prerequisites

PREREQUISITES must be completed with a 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.

- WR 115 - Introduction to College Composition 4 Credit(s) or WR 115W, or higher
- MTH 052 - Math for Health and Physical Sciences 4 Credit(s) or higher
- HP 100 - Medical Terminology 1 3 Credit(s)
- HP 150 - Human Body Systems 1 3 Credit(s)
- HP 152 - Human Body Systems 2 3 Credit(s)
- Complete one of the following (4 credits): CIS 101 - Computer Fundamentals or CS 120 - Concepts of Computing: Information Processing

### General Education

GENERAL EDUCATION courses must be completed with a grade of C or better. P/NP is not accepted.

**Human Relations (4 credits). Complete one of the following:**

- 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)

**General Education electives (3 credits), selected from any of the following:**

- Arts and Letters
- Health/Wellness/Fitness
- Science/Math/Computer Science
- Social Science

## Program Core Courses

CORE courses must be completed with a grade of C or better. P/NP is not accepted.

- 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 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 200 - Healthcare Statistics 3 Credit(s)
- HIM 210 - Leadership for Health Information 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 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 grade of C or better. P/NP is not accepted.

- Complete 2 credits of COOP 206 - Co-op Ed: Internship Seminar
- Complete 3 credits of HIM 280 - Co-op Ed: Health Information Management

## Notes

- This is the parent program for 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 HIM 222, HIM 270, HIM 271, HIM 273, and HIM 280.
- All program prerequisites with the subject prefixes CS and HP must be completed no more than five years prior to HIM program acceptance.
- BT 120 - MS WORD for Business has been removed as an option for the Basic Health Care, CPC and will not meet HIM Program computer credit requirements. BT 120 will be accepted if completed prior to 2020-21.
- 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 from the start of the governing catalog.
- Students who completed the Medical Coding (online), CPC should see their Academic Advisor or Program Coordinator for course substitutions in the HIM program.
- Completion of BI 231, BI 232, and BI 233 with a "C" or higher is an acceptable equivalent for HP 150 and HP 152.
- Students using lower-credit courses to meet General Education requirements may need to take additional Electives to meet the 90-credit minimum.
- 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 ([koeningm@lanecc.edu](mailto:koeningm@lanecc.edu)) 541.463.5818, Bldg 11/244.
- Cooperative Education is required for students to earn their HIM AAS degree. 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. Contact the HIM Cooperative Education Coordinator, Shelley Williams, Room 210, Bldg. 30, 541.463.5182

## Accreditation (pending)

The Health Information Management AAS degree program is in Candidacy Status, pending accreditation review by the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM).

## Hotel/Restaurant/Tourism Management, AAS

### Program Suspended

For students currently enrolled in the program, please contact Academic Advising at [culinaryhospprograms@lanecc.edu](mailto:culinaryhospprograms@lanecc.edu) for information about completing the program in a timely manner.

## Human Services, AAS

**Length:** Two years, 91 credits

### Program Contacts

Offered by the Social Science Division

Program Coordinator: Susan Shipp, [shipp@lanecc.edu](mailto:shipp@lanecc.edu), 541.463.5231

Academic Advising Team: [socsci-llcprograms@lanecc.edu](mailto:socsci-llcprograms@lanecc.edu), drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

Cooperative Education: [lanecc.edu/cooped/contact](http://lanecc.edu/cooped/contact)

### Estimated Cost: \$13,955

- Books/Course Materials - \$1,900
- Resident Tuition and General Student Fees - \$12,055

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

## 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. 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: [mhacbo.org/en](http://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:

- Communicate effectively with others, both verbally and in writing.
- Become knowledgeable about ethical standards inherent in the human services field.
- Develop interviewing skills.
- Develop cultural competency in working with people from diverse backgrounds.
- Conduct various assessments.
- Develop a plan of action for clients using a strengths-based approach to link people with community resources.
- Develop and demonstrate evidence-based practices.
- Demonstrate appropriate professionalism.
- Develop and demonstrate computer literacy to use technology for educational and career success.

## Program Requirements

### General Education

GENERAL EDUCATION courses must be completed with a grade of C- or better, or Pass.

#### Writing (8 credits)

- WR 121 - Academic Composition or WR 121\_H - Academic Composition-Honors AND
- WR 122 - Argument, Research and Multimodal Composition or WR 122\_H - Argument, Research and Multimodal Composition-Honors

#### Math (3 credits)

- MTH 025 - Basic Mathematics Applications or higher

#### Communications (4 credits). Complete one of the following:

- COMM 100 - Basic Communications
- COMM 111 - Fundamentals of Public Speaking or COMM 111\_H - Fundamentals of Public Speaking-Honors
- COMM 112 - Persuasive Speech
- COMM 130 - Business and Professional Communication

- COMM 218 - Interpersonal Communication
- COMM 219 - Small Group Communication

**Science/Math/Computer Science (3-4 credits).** Complete **one course**, selected from the following list:

- Science/Math/Computer Science

**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 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)

**Psychology and Sociology (9 credits).** Complete any combination of courses from the following:

- PSY 110 - Exploring Psychology 3 Credit(s)
- 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)
- PSY 231 - Human Sexual Behavior 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 - Introduction to Sociology 4 Credit(s) or 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)
- SOC 208 - Sport and Society 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)
- SOC 225 - Social Problems 4 Credit(s)
- SOC 228 - Introduction to Environmental Sociology 4 Credit(s)
- Any lower-division PSY or SOC transfer course (3-credit minimum), with the exception of courses numbered 180/280 or 198/298

## Program Core Courses

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 must be completed prior to placement.

**Complete 18 credits of HS 280 - Cooperative Education: Human Services**

## Program Electives

ELECTIVES must be completed with a letter grade of C- or better. P/NP is not accepted.

**Complete 9 credits, selected from either of the lists below:**

Human Services

- 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)

Criminal Justice

- CJA 200 - Introduction to Criminology 4 Credit(s)
- CJA 201 - Juvenile Delinquency 3 Credit(s)

## Notes

- This program follows Associate of Applied Science (AAS) Requirements unless otherwise specified.
- This is the parent program for the 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 HS 280 - Cooperative Education: Human Services are required to complete this degree.
- HS 150 must be completed prior to enrollment in HS 280 - Cooperative Education: Human Services, and HS 226 is recommended prior to beginning your Cooperative Education placement.

**Cooperative Education:** Students are required to attend a co-op orientation prior to beginning their field placement. Contact Christina Salter, Co-op Coordinator at [salterc@lanec.edu](mailto:salterc@lanec.edu) or 541.463.5813.

## Industrial Mechanics and Maintenance Technology Apprenticeship, AAS

**Length:** 90 credits

### Program Contacts

Offered by the Advanced Technology department

Program Coordinator: Joy Crump, [crumpj@lanec.edu](mailto:crumpj@lanec.edu), 541.463.5496

Academic Advising Team: [advtechprograms@lanec.edu](mailto:advtechprograms@lanec.edu); drop-in advising calendar [lanec.edu/advising/drop-advising](http://lanec.edu/advising/drop-advising); 541.463.3800

### Estimated Cost: \$13,843

- Books/Materials - \$1,645
- Resident Tuition and General Student Fees - \$12,198

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 [lanec.edu/esfs/credit-tuition](http://lanec.edu/esfs/credit-tuition).

## 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:**

- Perform the duties and responsibilities of the millwright trade.
- Develop machine shop skills in troubleshooting.
- Demonstrate and use industry safety standards.
- Identify mechanical and/or electrical industrial systems.
- Develop attitudes conducive to improved customer relations skills in the millwright trade.
- Develop communication and critical thinking skills necessary for job advancement.
- Use appropriate library and information resources to research professional issues and support lifelong learning.
- Access library, computing, and communications services, and appropriately select information and data from regional, national, and international networks.
- Apply appropriate formulas to mathematical situations.
- 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](http://boli.state.or.us).

## Program Requirements

### General Education

GENERAL EDUCATION 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 MTH 075 - Applied Algebra for Technicians 4 Credit(s)

### Human Relations (3-4 credits), choose 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)

## Program Core Courses

CORE courses must be completed with a letter grade of C or better. P/NP is not accepted.

### Millwright (43 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)
- MTH 085 - Applied Geometry for Technicians 4 Credit(s)

### Journeyman card from Oregon BOLI (22 credits)

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 the equivalent of 22 Credits.

### Program Electives

ELECTIVES must be completed with a grade of C- or better, or Pass. **Complete credits to meet 90 total credits for the program (approximately 14 credits).** Select courses from the list below. Contact your Academic Advisor or Program Coordinator for help.

- 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 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: 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.

## Manufacturing Technology Computer Numerical Control Technician Option, AAS

**Length:** Two years, 93 credits

### Program Contacts

Offered by: Advanced Technology Division

Program Coordinator: Tracy Rea, [reat@lanecc.edu](mailto:reat@lanecc.edu), 541.463.5151

Advanced Technology Academic Advising Team: [advtechprograms@lanecc.edu](mailto:advtechprograms@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

Cooperative Education: [lanecc.edu/cooped/contact](http://lanecc.edu/cooped/contact)

### Estimated Cost: \$20,453

- Books - \$900
- \*Differential Fees - \$3,304
- Instruments/Tools - \$1,425
- Program-Specific Fees - \$1,326
- Resident Tuition and General Student Fees - \$13,498

Tuition and fee estimates are based on the prior academic year's rates. Course fees may change during the year. Learn more and view updated tuition and fee information at [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition). \*This is the total of all the differential fees attached to the courses in this program.

## Learning Outcomes

The purpose of this program is to prepare students for the challenging technicalities of CNC Manufacturing. This program focuses heavily on CNC operation, especially CNC-specific safety procedures, CAD, CAM, and g-code. Manufacturing Technology has long been a staple in any modern economy. Since the 1960s, CNC Manufacturing has been increasing rapidly. Everything around you, from your car to your cell phone, medical equipment to construction tools, has been designed in CAM software, had each piece prototyped and finally mass produced on CNC machines.

CNC Technology is better for producing many parts from the same print than manual manufacturing. Almost every modern field has parts that require incredibly small and precise measurements. In these fields measuring, designing, and manufacturing parts must be done with extreme accuracy, sometimes down to 0.1 microns. A human hair is 700x as thick as 0.1 micron.

### Students who complete this program will be able to:

- Operate safely in a manufacturing environment.
- Effectively use precision measuring tools, read prints and have the mathematical skills to accomplish shop tasks.
- Use most shop machinery including programming, setup and operation of CNC lathes and mills as well as CAD, CAM and verification software used in CNC manufacturing environments.
- Have proficiency in the setup and operation of all standard machine tools employed by the modern machine shop.
- Demonstrate and use industrial safety standards for safe operation of all machine tools.
- Use basic math skills, formulas and right angle trigonometry to accomplish tasks.
- Use the internet to access information pertaining to shop techniques and tool use.
- Create and edit g-code programs both manually and with CAM software.
- Setup, program and machine parts on 3-axis CNC milling machines and 2 axis CNC lathes.



## Program Requirements

### General Education

GENERAL EDUCATION courses must be completed with a letter grade of C- or better, or Pass.

**Writing (3-4 credits). Complete one of the following:**

- WR 115 - Introduction to College Composition 4 Credit(s) or WR 115W - Introduction to College Writing: Workplace Emphasis 3 Credit(s) or higher

**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)

**Computer Science/Math (4 credits). Complete one of the following:**

- MTH 060 - Beginning Algebra 4 Credit(s)
- MTH 075 - Applied Algebra for Technicians 4 Credit(s)
- CIS 101 - Computer Fundamentals 4 Credit(s)
- CS 120 - Concepts of Computing: Information Processing 4 Credit(s)
- Or higher-level CS course

### Program Core Courses

CORE courses must be completed with a letter grade of C- or better. P/NP is not accepted. It is highly recommended students complete the math and computer science requirement prior to registering for CNC 101 - CNC Concepts. 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)
- CNC 201 - CNC Mill 3 Credit(s)
- CNC 202 - CNC Lathe 3 Credit(s)
- CNC 208 - CNC Advanced Projects 6 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)
- MFG 241 - Solid Modeling 1 3 Credit(s)
- MFG 242 - Solid Modeling 2 3 Credit(s)
- MFG 243 - CAM 1 6 Credit(s)
- MFG 244 - CAM 2 6 Credit(s)
- MFG 254 - Manufacturing 4 6 Credit(s)

**Complete one of the following:**

- CNC 209 - Advanced CNC Concepts 6 Credit(s)
- ENGR 280M - Co-op Ed: Manufacturing Technology 3-12 Credit(s)

### Electives

ELECTIVES must be completed with a grade of C- or better, or Pass.

**4 credits. Complete any course(s), 100-level or higher.**

### Notes

- This program follows the Associate of Associate of Applied Science (AAS) Requirements unless otherwise specified.
- A high school diploma or equivalent is recommended for all applicants to this program.
- If math is taken in the self-paced format through the Math Resource Center, then all credits must be completed to meet math requirements.
- 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.

- Co-op experience may be substituted for major coursework. For more information, please see your Academic Advisor or Program Coordinator.

## Manufacturing Technology, AAS

**Length:** Two years, 90 credits

### Program Contacts

Offered by: Advanced Technology Division

Program Coordinator: Tracy Rea, [reat@lanecc.edu](mailto:reat@lanecc.edu), 541.463.5151

Advanced Technology Academic Advising Team: [advtechprograms@lanecc.edu](mailto:advtechprograms@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

Cooperative Education: [lanecc.edu/cooped/contact](http://lanecc.edu/cooped/contact)

**Estimated Cost:** \$19,863

- Books - \$900
- \*Differential Fees - \$3,050
- Instruments/Tools - \$1,425
- Program-Specific Fees - \$1,244
- Resident Tuition and General Student Fees - \$13,244

Tuition and fee estimates are based on the prior academic year's rates. Course fees may change during the year. Learn more and view updated tuition and fee information at [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition). \*This is the total of all the differential fees attached to the courses in this program.

### Learning Outcomes

The purpose of this program is to provide fundamental training in the manufacturing field. Manufacturing Technology is a great choice for anyone who enjoys working with their hands or building things themselves. The work is challenging, engaging, and technical. At the end of the day, there is satisfaction in being able to see the results of your skills and effort.

Students are exposed to aspects of machining such as metrology, part print creation, prototyping, and manufacturing components for industry. These skills are an excellent choice for a pre-engineering student. Students are introduced to a wide variety of advanced technology, including 3D printing, 5-axis CNC milling, 4-axis CNC turning with live tooling and Electrical Discharge Machining. Instruction is derived of hands-on projects, lectures and online learning to facilitate working while attending school. Many students obtain employment while attending this program. Graduates qualify for a wide range of entry level positions such as CNC Operator or Manual Machinist, some of the fastest growing career options in Oregon and Lane County. Graduates have gone on to build custom vehicles, make custom auto, motorcycle and aviation parts, gunsmithing, knifemaking, old vehicle restoration, machinery repair, and fields such as aerospace, automotive, engineering and industrial maintenance.

**Students who complete this program will be able to:**

- Operate safely in a manufacturing environment
- Use precision measuring tools, read prints and have mathematical skills to accomplish shop tasks
- Use most shop machinery and have basic knowledge in CNC including programming, set up and operation of CNC lathes and mills as well as basic knowledge in CAD, CAM and verification software used in CNC manufacturing environments
- Have proficiency in the setup and operation of all standard machine tools employed by the modern machine shop
- Demonstrate and use industrial safety standards for safe operation of all machine tools
- Use basic math skills, formulas and right angle trigonometry to accomplish shop tasks
- Use the Internet to access information pertaining to shop techniques and tool use

### Program Core Requirements

#### General Education

GENERAL EDUCATION courses must be completed with a letter grade of C- or better, or Pass.

**Writing (3-4 credits). Complete one of the following:**

- WR 115 - Introduction to College Composition 4 Credit(s) or WR 115W - Introduction to College Writing: Workplace Emphasis 3 Credit(s) or higher

**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)

**Computer Science/Math (4 credits). Complete one of the following:**

- MTH 060 - Beginning Algebra 4 Credit(s)
  - MTH 075 - Applied Algebra for Technicians 4 Credit(s)
  - CIS 101 - Computer Fundamentals 4 Credit(s)
  - CS 120 - Concepts of Computing: Information Processing 4 Credit(s)
  - Or higher-level CS course

## Program Core Courses

CORE courses must be completed with a letter grade of C- or better. P/NP is not accepted. It is highly recommended students complete the math and computer science requirement 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)
- MFG 209 - Advanced Manufacturing Processes 6 Credit(s)
- MFG 241 - Solid Modeling 1 3 Credit(s)
- MFG 242 - Solid Modeling 2 3 Credit(s)
- MFG 254 - Manufacturing 4 6 Credit(s) (take 12 credits of MFG 254)
- MFG 255 - Manufacturing 5 6 Credit(s)

**Choose one of the following courses (3-4 credits)**

- DRF 160 - Computer-Aided Drafting and Design 4 Credit(s)
- WLD 121 - Shielded Metal Arc Welding 1 1-4 Credit(s)
- WLD 151 - Fundamentals of Metallurgy 1-3 Credit(s)

## Cooperative Education

Complete 3 credits of ENGR 280M - Co-op Ed: Manufacturing Technology

## Electives

ELECTIVES must be completed with a grade of C- or better, or Pass.

**4 credits. Complete any course(s), 100-level or higher.**

## Notes

- This is the parent program for the Manufacturing Technician 1, CPC and Manufacturing Technician 2, CPC certificates.
- This program follows Associate of Applied Science (AAS) Requirements unless otherwise specified.
- If math is taken in the self-paced format through the Math Resource Center, then all credits must be completed to meet math requirements.
- A high school diploma or equivalent is recommended for all applicants to this program.
- Co-op experience may be substituted for major coursework. For more information, please see your Academic Advisor or Program Coordinator.
- Students using lower credit courses to meet General Education requirements may need to take additional Electives to meet the 90 credit minimum.
- 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.

## Multimedia Design, AAS

**Length:** Two years, 90 credits

Offered by the Division of the Arts

Program Coordinator: Contact the Division, Bldg. 11, Room 101, 541.463.5411

Arts Academic Advising Team: [ArtsPrograms@lanecc.edu](mailto:ArtsPrograms@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

Cooperative Education: [lanecc.edu/cooped/contact](http://lanecc.edu/cooped/contact)

**Estimated Cost: \$13,983**

- Books - \$1,700
- Resident Tuition and General Student Fees - \$12,283

Course fees may change during the year. Learn more and view updated tuition and fee information at [lanecc.edu/ests/credit-tuition](http://lanecc.edu/ests/credit-tuition).

## 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:**

- Become proficient in developing and applying effective visual design and production strategies for creating multimedia, film/video, animation, games, web sites, and photography for business, education, and entertainment industries.
- Produce, manipulate, and process digital content using computer software applications.
- Design digital projects incorporating multiple forms of media such as text, graphics, audio, video, and animation.
- Have additional skills in one or more elective areas: software, design, or media production.
- Understand the concepts, potential and implications of communicating ideas using multimedia technologies.
- Use appropriate library and information resources to research media issues, concepts and tools, and support lifelong technical learning.

## Program Requirements

### General Education

**General Education** 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)

## Program Core Courses

All of the following courses must be completed with a letter grade of B- or better. P/NP is not accepted.

- ART 216 - Digital Design Tools 3 Credit(s)
- AUD 120 - Audio Production 4 Credit(s)
- FA 250 - Concepts of Visual Literacy 3 Credit(s)
- FA 261 - Writing and Interactive Design 3 Credit(s)
- MUL 105 - Digital Photography 4 Credit(s)
- MUL 210 - Multimedia Design 3 Credit(s)
- MUL 212 - Digital Imaging 4 Credit(s)

**Multimedia Production (8 credits):**

- MDP 246 - Multimedia Production 1 4 Credit(s)
- MDP 247 - Multimedia Production 2 4 Credit(s)

**Video Production (6 credits):**

- VP 151 - Video Production 1: Camera 3 Credit(s)
- VP 152 - Video Production 2: Editing 3 Credit(s)

**All of the following courses must be completed with a letter grade of C- or better. P/NP is not accepted.**

- ART 115 - Basic Design: Fundamentals 3 Credit(s)
- ART 245 - Drawing for Media 4 Credit(s)
- ART 288 - Introduction to Web Design and Social Media 3 Credit(s)
- FA 221 - Computer Animation 4 Credit(s)
- MUL 101 - Introduction to Media Arts 3 Credit(s)
- MUL 103 - Time-Based Tools 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. P/ NP is not accepted. **Complete 6 credits of Cooperative Education.**

- MDP 280 - Co-op Ed: Multimedia 3-12 Credit(s)

## Electives

**Program Electives** must be completed with a letter grade of C- or better. P/ NP is not accepted. **Complete 11 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)
- CS 295P - Web Development 1: PHP 4 Credit(s)

**Or any course(s) from the following subject areas:**

ARH - Art History

ART - Art

CINE - Cinema Studies

FA - Film Arts

GD - Graphic Design

J - Journalism

MDP - Multimedia Production

MUL - Multimedia

## Notes

- This is the parent program for Multimedia Design, 1-yr Certificate.
- This program follows Associate of Applied Science (AAS) Requirements unless otherwise specified.
- Major courses that serve as a prerequisite in a sequence must be passed with a B- or higher.
- Cooperative Education (Co-op) Opportunities to work directly in media industries as interns are provided by the Co-op program. Through Co-op, students connect classroom learning with field experience, gain skills, and make contacts for the future. 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. 17, Rm. 106, 541.463.3179, [hughest@lanecc.edu](mailto: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.
- Computer programming languages: Students' taking their first programming language (C, N, or P) will take CS 161/162. Because CS 161/162 are not repeatable courses, upon taking a second programming language, students must use the CS 133/233 course numbers. CS 161/162 are the courses listed in catalog degree requirements but CS 133/233 will be accepted as well. For help with this, contact the department or academic advisors.

## Music Technology and Sound Engineering, AAS

**Length:** Two years, 90 credits

Offered by the Division of the Arts

Program Coordinators: Matthew Svoboda, [svobodam@lanecc.edu](mailto:svobodam@lanecc.edu), 541.463.5736; Hisao Watanabe, [watanabeh@lanecc.edu](mailto:watanabeh@lanecc.edu), 541.463.5019; Seth Mulvihill, [mulvihills@lanecc.edu](mailto:mulvihills@lanecc.edu), 541.463.5184

Arts Academic Advising Team: [ArtsPrograms@lanecc.edu](mailto:ArtsPrograms@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

**Estimated Cost: \$11,143**

- Books/Course Materials - \$1,000

- Program-Specific Fees - \$400
- Resident Tuition and General Student Fees - \$9,743

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

## 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 Northwest Christian University.

**Students who complete this program will be able to:**

- Demonstrate proficiency using software and hardware for recording, editing and processing music and audio for commercial and artistic purposes.
- Identify and use a variety of microphones, preamplifiers, and other outboard signal processors.
- Demonstrate skill in microphone selection and placement.
- Analyze audio recordings in terms of frequency, stereo field, phase cancellation, and dynamic range.
- Demonstrate knowledge of MIDI basics including: MIDI networks and MIDI sequencers.
- Demonstrate understanding of technical vocabulary associated with audio engineering.
- Demonstrate understanding of technical vocabulary associated with MIDI and MIDI software.
- Engineer and produce recording sessions for many instruments and styles.
- Do creative work under pressures of deadlines and scheduling time with clients.
- Create high quality audio mixes for a variety of commercial and creative purposes.
- Demonstrate proficiency in keyboards and/or other instrument(s).
- Demonstrate knowledge and practical use of various studio file formats (AIFF, MP3).

## Program Requirements

### General Education

GENERAL EDUCATION courses must be completed with a grade of C- or better, or Pass.

#### Writing (4 credits)

- WR 115 - Introduction to College Composition or higher

#### Math (4 credits)

- MTH 060 - Beginning Algebra 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)

## 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.

#### Music Fundamentals

- MUS 101 - Music Fundamentals 3 Credit(s)
- MUS 131 - Group Piano 2 Credit(s)

#### Music Core - Term 1 (Fall)

- 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 - Term 2 (Winter)
- 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 - Term 3 (Spring)
- 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 and Sound Engineering
- 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 Courses

ENSEMBLE courses must be completed with a grade of C- or better, or Pass. **Complete 12 credits, selected from the approved list below.**

- 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)

## Group and Individual Lessons

**Required: 3 credits of Individual Lessons, MUP 100- or 200-level. See course listings.**

**Required: Additional 3-4 credits, choice of Individual Lessons, Group Lessons (see approved list), or a combination of the two.**

Individual Lessons must be completed with a letter grade of C- or better. P/NP is not accepted.

Group Lessons can be completed with a letter grade of C- or better, or Pass.

Approved Group Lessons courses

- MUS 134 - Group Voice 2 Credit(s)
- MUS 137 - Group Guitar 2 Credit(s)
- MUS 138 - Group Guitar 2 2 Credit(s)

## Program Electives

ELECTIVES must be completed with a grade of C- or better, or Pass.

**Required: Complete 10 credits of Electives**, chosen from the Recommended or Other Program Electives list.

**Required: Complete an additional 3 credits of Electives**, chosen from the Recommended or Other Program Electives lists, or complete any 100-level or 200-level course to meet this requirement.

### Recommended Program Electives

- 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)

### Other Program Electives options

- MUS 103 - Songwriting 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 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 Credit(s)
- 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.
- 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.
- If math is taken in the self-paced format through the Math Resource Center, then all credits must be completed to meet the math requirement(s).
- Students must take a music theory placement test prior to enrollment in the Music Core. The music theory placement test is offered by the Music Department. Depending on music theory placement, some students may skip MUS 101 - Music Fundamentals and MUS 131 - Group Piano and replace them with Directed 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.
- Music Technology students should work closely with program faculty and academic advising.

## Nursing, AAS

**Program Length:** Two years, 90 credits

**Program Prerequisites:** 45 credits

### Program Contacts

Offered by the Health Professions Division

Program Coordinator: Maggie Kruit, [kruitm@lanecc.edu](mailto:kruitm@lanecc.edu), 541.463.5753

Academic Advising Team: [NursingProgram@lanecc.edu](mailto:NursingProgram@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

Cooperative Education: [lanecc.edu/cooped/contact](http://lanecc.edu/cooped/contact)

**Estimated Cost: \$32,897**

- Books - \$1,400
- Certification, Licensure, Exams, Physicals - \$248
- Computers/Internet Service - \$1,300
- \*Differential Fees\* - \$13,940
- Program-Specific Fees - \$3,811
- Resident Tuition and General Student Fees - \$12,198

Course tuition and fees may change during the year. Learn more and view updated tuition and fee information at [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition). \*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.

## 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.

**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:**

- Base personal and professional actions on a set of shared core nursing values
- Develop insight through reflection, self-analysis and self-care
- Engage in intentional learning
- Demonstrate leadership in nursing and healthcare
- Collaborate as part of a health care team
- Utilize and contributes to the broader health care system
- Practice relationship-centered care
- Communicate effectively
- Make sound clinical judgments
- Use the best available evidence

## Admission Information

For information about the Nursing program, available options, and application packet, please see the following:

- Main website: [lanecc.edu/hp/nursing](http://lanecc.edu/hp/nursing)
- RN application: [lanecc.edu/hp/nursing/registered-nursing-application-information](http://lanecc.edu/hp/nursing/registered-nursing-application-information)
- LPN to RN Bridge information: [lanecc.edu/hp/nursing/pn-rn-bridge-application-information](http://lanecc.edu/hp/nursing/pn-rn-bridge-application-information)
- Drug testing, criminal back-ground check and immunizations required. Consult [lanecc.edu/hp/nursing/licensed-practical-nursing](http://lanecc.edu/hp/nursing/licensed-practical-nursing). Information on criminal background checks and disqualifying crimes can be found at the Oregon Board of Nursing at: <https://secure.sos.state.or.us/oard/displayDivisionRules.action?selectedDivision=3929>

## Program Requirements

**Program Prerequisites** must be completed with a letter grade of C or better. P/ NP is not accepted.

### 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:
- WR 121 (or WR 121\_H)
- WR 122 (or WR 122\_H)
- WR 123 or WR 227 (or WR 227\_H)

### Mathematics (5 credits)

- MTH 095 - Intermediate Algebra 5 Credit(s)
- (or higher-level Math course)

**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 to meet 45 credits.** Choose any courses from the Approved Discipline Studies Courses for Associate Degrees and Oregon Transfer Module lists.

## 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 Natural 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

**Program 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.

## Notes

- This program follows Associate of Applied Science (AAS) Requirements unless otherwise specified.
- 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.
- 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 classes.

**Cooperative Education:** Co-op internships may be taken as an optional elective any of the last four terms of the program. Contact Tricia Tully, (Cooperative Education Coordinator for Nursing), [tullyt@lanecc.edu](mailto:tullyt@lanecc.edu).

## Licensing and Certification

**Nursing Approval:** Oregon State Board of Nursing (OSBN) 27938 SW Upper Boones Ferry Rd, Portland, OR, 971.673.0685, [oregon.gov/OSBN](http://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.

**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:** Two years, 100 credits

### Program Contacts

Offered by the Health Professions Division

Program Coordinator: Cory Miner, [minerjc@lanecc.edu](mailto:minerjc@lanecc.edu), 541.463.5183

Health Professions Academic Advising Team: [EMSProgram@lanecc.edu](mailto:EMSProgram@lanecc.edu) drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

Cooperative Education: [lanecc.edu/cooped/contact](http://lanecc.edu/cooped/contact)

### Estimated Cost: \$21,715

- Books/Course Materials - \$2,016
- Certification, Licensure, Exams, Physicals - \$1,853
- Computers/Internet Service - \$1,450
- \*Differential Fees - \$2,081
- Instruments/Tools - \$20
- Program Specific Fees - \$3,970
- Resident Tuition and General Student Fees - \$10,050
- Uniforms - \$275

Tuition and fee estimates are based on the prior academic year's rates. Course fees may change during the year. Learn more and view updated tuition and fee information at [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition). \*This is the total of all the differential fees attached to the courses in this 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. 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:

- Demonstrate personal behaviors consistent with public and employer expectations of professional EMS providers.
- Demonstrate technical proficiency in the performance of EMS skills.
- Demonstrate technical proficiency with the operation of EMS equipment.
- Understand, interpret, apply, evaluate and effectively communicate EMS and general medical knowledge necessary to function in a healthcare setting.
- Communicate effectively.

### Admission Information

Students are encouraged to consult the Academic Advising Team ([EMSProgram@lanecc.edu](mailto:EMSProgram@lanecc.edu)) before applying for admission. Program application and information about the point allocation system is available at [lanecc.edu/hp/emt](http://lanecc.edu/hp/emt).

### Program Requirements

#### General Education

GENERAL EDUCATION courses must be completed with a letter 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 and Physical Sciences 4 Credit(s) or higher

#### Program Core Courses

CORE courses must be completed with a letter grade of C or better. P/NP is not accepted. EMS 102 - Crisis Intervention satisfies the Human Relations requirement.

- 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)
- 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)
- EMS 201 - Pathophysiology 3 Credit(s)
- EMS 211 - Pharmacology 1 2 Credit(s)
- EMS 212 - Pharmacology 2 2 Credit(s)
- 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)
- EMS 241 - Electrocardiography 1 3 Credit(s)
- EMS 242 - Electrocardiography 2 3 Credit(s)
- 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)
- EMS 261 - Paramedic Clinical 1 1 Credit(s)
- EMS 262 - Paramedic Clinical 2 3 Credit(s)
- EMS 263 - Paramedic Clinical 3 4 Credit(s)
- HP 100 - Medical Terminology 1 3 Credit(s)

### Cooperative Education

COOPERATIVE EDUCATION courses must be completed with a letter grade of C or better. P/NP is not accepted.

- Complete 3 credits of EMS 280P1 - Co-op Ed: Paramedic Internship P1
- Complete 7 credits of EMS 280P2 - Co-op Ed: Paramedic Internship P2

### Notes

- This program follows Associate of Applied Science (AAS) Requirements unless otherwise specified.
- CH 112 - Chemistry for Health Occupations and BI 112 - Cell Biology for Health Occupations are prerequisites for BI 231 - Human Anatomy and Physiology 1 at Lane. Transfer students should contact their Academic Advisor.
- Students pursuing a bachelor's degree need to complete a college level, transferable math course.
- 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.

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## Physical Therapist Assistant, AAS

**Length:** Two years, 94 credits

**Program Prerequisites:** 11 credits

#### Program Contacts

Offered by Health Professions

Program Coordinator: Christina Howard, PT, MPT, [howardc@lanecc.edu](mailto:howardc@lanecc.edu), 541.463.5764

Academic Advising Team: [PTAProgram@lanecc.edu](mailto:PTAProgram@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

Cooperative Education: [lanecc.edu/cooped/contact](http://lanecc.edu/cooped/contact)

**Estimated Cost: \$24,579**

- Books/Course Materials - \$1,100
- Program-Specific Fees - \$2,566
- Other Program Expenses - \$3,213
- Travel - \$500
- \*Differential Fees - \$2,630
- Resident Tuition - \$11,606
- General Student Fees - \$2,964

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition). \*This is the total of all the differential fees attached to the courses in this 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:**

- Communicate verbally and non-verbally with the patient, the physical therapist, health care delivery personnel, and others in an effective, appropriate, and capable manner.
- Recognize individual and cultural differences and responds appropriately in all aspects of physical therapy services.
- Exhibit conduct that reflects a commitment to meet the expectations of the members of the profession of physical therapy and members of society receiving health care services.
- Exhibit conduct that reflects safe practice standards that are legal, ethical and safe.
- Communicate an understanding of the plan of care developed by the physical therapist to achieve short and long term goals and intended outcomes.
- Demonstrate competence in implementing selected components of interventions identified in the plan of care established by the physical therapist, including functional training, infection control, manual therapy, physical and mechanical agents, therapeutic exercise, and wound management.
- Demonstrate competency in performing components of data collection skills essential for carrying out the plan of care, including tests and measures for aerobic capacity, pain, cognition, assistive and prosthetic devices, joint motion, muscle performance, neuromotor development, posture, self-care and home/community management, ventilation, respiration, and circulation.
- Recognize and initiates clarifications with the supervising physical therapist when indicated.
- Adjust treatment interventions within the plan of care to optimize patient safety, progress, and comfort; reports outcomes to the supervising physical therapist.
- Instruct and educates patients, family members, and caregivers as directed by the supervising physical therapist.
- Instruct members of the health care team as directed by the supervising physical therapist, using appropriate instructional materials and approaches.
- Demonstrate a commitment to meeting the needs of the patients and consumers.
- Interact with other members of the health care team in patient care and non-patient care activities.
- Provide accurate and timely information for billing and reimbursement purposes.
- Participate in quality assurance activities.
- Demonstrate an awareness of social responsibility, citizenship and advocacy, including participation in community and service organizations and activities.
- Identify career and lifelong learning opportunities.

**Admission Information**

Students are admitted once a year. Admission is restricted and is based on a program application. Please consult [lanecc.edu/hp/pta](http://lanecc.edu/hp/pta).

**Program Requirements**

PREREQUISITES must be completed with a grade of C- or better, or Pass. Prerequisites must be completed prior to applying for the program. Application should include documentation of 16 clinical observation/experience hours with a PT or PTA. See application for information: [lanecc.edu/hp/pta](http://lanecc.edu/hp/pta)

**HUMAN BIOLOGY:** Students who complete BI 102I as a prerequisite will have satisfied the Human Biology prerequisite requirement. If BI 102I is not completed as a prerequisite, select either HP 150/HP 152 or BI 231/BI 232/BI 233.

**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 (no longer offered at LCC) will also be accepted to meet this requirement

**Writing (4 credits). Complete one of the following:**

Prior bachelor's degree, verified by transcript from US accredited institution or higher, may be used to meet the Writing requirement.

- 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
- WR 123 - Composition: Research Writing 4 Credit(s)
- WR 227 - Technical Writing 4 Credit(s) or WR 227\_H

**General Education**

GENERAL EDUCATION courses must be completed with a grade of C- or better, or Pass.

**Math (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)

**Human Biology (4-12 credits). Complete one of the following:**

- Students who complete 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.
- BI 102I - General Biology-Human Biology 4 Credit(s)

OR

- HP 150 - Human Body Systems 1 3 Credit(s) AND HP 152 - Human Body Systems 2 3 Credit(s)

OR

- BI 231 - Human Anatomy and Physiology 1 4 Credit(s) AND BI 232 - Human Anatomy and Physiology 2 4 Credit(s) AND BI 233 - Human Anatomy and Physiology 3 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)

**Program Core Courses**

HP 153 must be completed with a grade of C- or better, or Pass. All other 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.

**Students must complete the Human Biology requirement by the end of Fall Term in Year 1** of the program.

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)
- PTA 206 - Physical Therapist Assistant Seminar 2 Credit(s)

Cooperative Education (18 credits required)

- 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)

## 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 18 credits of 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](mailto: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), 1111 North Fairfax Street, Alexandria, Virginia 22314; (703) 706-3245; [accreditation@apta.org](mailto:accreditation@apta.org); <http://capteonline.org>. If needing to contact the program/institution directly, please call (541) 463-5617 or email [healthprofessionsoffice@lanecc.edu](mailto:healthprofessionsoffice@lanecc.edu)

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## Sustainability Coordinator, AAS

**Length:** Two years, 90 credits

### Program Contacts

Offered by the Science Division

Program Coordinator: Luis Maggiori, [maggioril@lanecc.edu](mailto:maggioril@lanecc.edu), 541.463.5884

Academic Advising Team: [Sci-MathPrograms@lanecc.edu](mailto:Sci-MathPrograms@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

Cooperative Education: [lanecc.edu/cooped/contact](http://lanecc.edu/cooped/contact)

### Estimated Cost: \$15,198

- Books/Materials - \$3,000
- Resident Tuition and General Student Fees - \$12,198

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

## 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:

- 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.
- Develop policies that support the triple bottom line of sustainability: healthy economy, healthy environment, and healthy communities.
- Obtain information from public and research libraries, online sources, and regional, national, and international networks
- Demonstrate skills in data collection and analysis, statistical analysis, and basic mathematics.
- Perform environmental audits, perform laboratory and field tests, conduct and coordinate research, and prepare written reports for internal and external stakeholders.
- 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.
- 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.
- Articulate verbal and written understanding of laws and regulations related to sustainable environment, business and community.

- Develop and implement action plans based on best practices; coordinate project management goals and tasks.
- Conduct public relations and social marketing efforts; develop educational materials; and create community networks and resources to support sustainability practices in business and community.
- Demonstrate the ability to organize events, meetings, workshops, conferences and fundraising.
- Utilize collaborative team skills in the design and implementation of sustainable practices.

## Program Requirements

### General Education

GENERAL EDUCATION 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 Communication 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)

### 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)

## 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 - Introduction 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.

- 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 212 - Peace and Conflict Studies: National 4 Credit(s)
- PS 213 - Peace and Conflict Studies: Local 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 225 - Social Problems 4 Credit(s)
- SOC 228 - Introduction to Environmental Sociology 4 Credit(s)

### Cooperative Education (5 credits)

COOPERATIVE EDUCATION 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.

**It is strongly recommended students choose WATR 202 as one of their electives.**

- ART 288 - Introduction to Web Design and Social Media 3 Credit(s)
- BT 230 - Sustainable Paperless Practices using Adobe Acrobat 4 Credit(s)
- GIS 151 - Digital Earth 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)
- HRTM 220 - Sustainability in the Hospitality Industry 2 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)
- SOIL 205 - Introduction to Soil Science 4 Credit(s)
- WATR 101 - Introduction to Water Resources 3 Credit(s)
- WATR 202 - Fostering Sustainable Practices 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:** Two years, 90 credits

### Program Contacts

Offered by the Science Division

Program Coordinator: Roger Ebbage, [ebbager@lanecc.edu](mailto:ebbager@lanecc.edu), 541.463.6160

Academic Advising Team: [Sci-MathPrograms@lanecc.edu](mailto:Sci-MathPrograms@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

Cooperative Education: [lanecc.edu/cooped/contact](http://lanecc.edu/cooped/contact)

### Estimated Cost: 13,198

- Program-Specific Fees - \$1,000
- Resident Tuition and General Student Fees - \$12,198

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

### 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:

- Evaluate indoor and outdoor water use patterns for rural, urban, residential and commercial sites.
- Recommend water efficiency measures, wise water landscapes and efficient plumbing solutions.
- Design, implement and evaluate and market water conservation programs to a broad audience.
- Convey water conservation strategies to a broad audience using multiple communication methods.
- Understand regional regulatory context and international code trends as they pertain to water conservation.
- Develop basic knowledge of water resource economics and how economics relates to supply and demand.
- Understand water distribution, flow and elimination systems; basic hydraulics; quality issues; balance and time of use.
- Create technical reports and collect, interpret, display and explain data.
- 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](http://lanecc.edu/science/water-conservation-technician)

### Program Requirements

#### General Education

GENERAL EDUCATION courses must be completed with a grade of C- or better, or Pass. It is recommended the following requirements be completed prior to entering the program.

#### Writing (8 credits)

- WR 121 - Academic Composition 4 Credit(s) or WR 121\_H or higher
- AND
- WR 227 - Technical Writing 4 Credit(s) or WR 227\_H

#### Math (5 credits). Complete one course.

- MTH 098 - Math Literacy 5 Credit(s) (recommended) or MTH 095 - Intermediate Algebra 5 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)



## Program Core Courses

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)
- GS 101 - General Science (Nature of the Northwest) 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 150 - Water Resource Economics 4 Credit(s) (This course does not run every year; see Program Coordinator or Academic Advisor for options)
- 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)

## Cooperative Education

COOPERATIVE EDUCATION course must be completed with a grade of C- or better, or Pass.

**Complete 6 credits of WATR 280 - Co-op Ed: Water Conservation Technician**

## Program Electives

ELECTIVES must be completed with a grade of C- or better, or Pass. ELECTIVES may be completed online, on campus, or transferred from another institution.

**Complete 5-6 credits, selected from the list below.**

**Complete an additional 1 credit, as needed, any course 100-level or higher**

- COMM 100 - Basic Communications 4 Credit(s)
- COMM 105 - Listening and Critical Thinking 4 Credit(s)
- COMM 111 - Fundamentals of Public Speaking 4 Credit(s)
- COMM 112 - Persuasive Speech 4 Credit(s)
- COMM 130 - Business and Professional Communication 4 Credit(s)
- 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)
- GD 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 (BA or BT)
- Any Multimedia course (MDP or MUL)
- Any Energy Management course (NRG)
- Any Spanish course (SPAN)

## 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.
- Cooperative Education (WATR 280) may be taken summer term.
- All WATR courses are offered fully online.
- Lane Community College does not offer ENSC 183 or GS 101 online. These courses 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 [meenagh@lanecc.edu](mailto:meenagh@lanecc.edu)

## Two-Year Certificates of Completion

Click on individual certificates to see specific program requirements. To see general requirements, go to Certificate of Completion Requirements.

### Automotive Technology, 2-yr Certificate

**Length:** Two years, 89 credits

#### Program Contacts

Offered by: Advanced Technology Division

Program Coordinator: Tracy Rea, [reat@lanecc.edu](mailto:reat@lanecc.edu), 541.463.5151

Advanced Technology Academic Advising Team: [advtechprograms@lanecc.edu](mailto:advtechprograms@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

Cooperative Education: [lanecc.edu/cooped/contact](http://lanecc.edu/cooped/contact)

**Estimated Cost: \$20,694**

- Books - \$1,006
- Differential Fees - \$2,999
- Instruments/Tools - \$3,170
- Program-Specific Fees - \$1,037
- Resident Tuition and General Student Fees - \$12,482

Tuition and fee estimates are based on the prior academic year's rates. Course fees may change during the year. Learn more and view updated tuition and fee information at [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

## Learning Outcomes

The purpose of this program is to prepare the graduate 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:**

- 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.
- Be able to 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.
- Diagnose and repair current vehicles using advanced diagnostic tools and equipment.
- Successfully complete ASE certification tests.
- Demonstrate and use industry safety standards.
- Access library, computing, and communications services and obtain information and data from regional and national networks.
- Interpret the concepts of a problem-solving task and translate them into mathematical equations.

## Program Requirements

### General Education

GENERAL EDUCATION 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)

**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 your 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 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 is embedded in the Automotive Technology, AAS degree.
- This program follows 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) Co-op offers 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. 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.

**Aviation Maintenance Technician, 2-yr Certificate**

**Length:** Two years, 104 credits

**Program Contacts**

Offered by Lane Aviation Academy

Program Coordinator: Neal Gallagher, Chief Instructor, [gallagher@lanecc.edu](mailto:gallagher@lanecc.edu), 541.463.4351

Academic Advising Team: [advtechprograms@lanecc.edu](mailto:advtechprograms@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

**Estimated Cost: \$17,648**

- Books - \$300
- Certification, Licensure, Exams, Physicals - \$1,500
- Instruments/Tools - \$500
- Program-Specific Fees - \$3,150
- Resident Tuition and General Student Fees - \$12,198

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

**Learning Outcomes**

The purpose of this program is to prepare technicians to repair and maintain aircraft in operating condition, 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:**

- Repair and maintain aircraft in operating condition.
- Pass the FAA written, oral and practical exams for certification.
- Demonstrate and use industry safety standards.
- Access library, computing and communications services and networks.
- Utilize mathematical and troubleshooting concepts.

**Program Requirements**

**General Education**

**General Education** 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:**

- MTH 075 - Applied Algebra for Technicians 4 Credit(s)
- MTH 085 - Applied Geometry for Technicians 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)

**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 Certificate of Completion 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 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 the 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 requirement 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 [lanecc.edu/cooped](http://lanecc.edu/cooped)

## 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.

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## Diesel Technology, 2-yr Certificate

**Length:** Two years, 93 credits

### Program Contacts

Offered by: Advanced Technology Division

Program Coordinator: Tracy Rea, [reat@lanecc.edu](mailto:reat@lanecc.edu), 541.463.5151

Advanced Technology Academic Advising Team: [advtechprograms@lanecc.edu](mailto:advtechprograms@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

Cooperative Education: [lanecc.edu/cooped/contact](http://lanecc.edu/cooped/contact)

**Estimated Cost: 19,481**

- Books - \$1,847
- \*Differential Fees - \$2,934
- Instruments/Tools - \$400
- Program-Specific Fees - \$1,691
- Resident Tuition and General Student Fees - \$12,609

Tuition and fee estimates are based on the prior academic year's rates. Course fees may change during the year. Learn more and view updated tuition and fee information at [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition). \*This is the total of all the differential fees attached to the courses in this 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:**

- Access library, computing, and communications services to obtain information and data
- Demonstrate math skills to find force, pressure, area, volume, horse power, torque, gear ratios and precision measurement
- Identify and explain technologies used in trucking, construction, logging, agriculture equipment, generators and marine applications in the following subjects:
  - Diesel Fuel Systems
  - Diesel Brake Systems
  - Diesel Powertrain and Chassis Systems
  - Diesel Hydraulic Systems
  - Diesel Electrical/Electronic Systems
  - Diesel HVAC Systems
  - Diesel Engines
- Identify and apply industry safety standards in a work environment
- Use industry tools and equipment to demonstrate, diagnose, service, repair, testing, disassembly, failure analysis, assembly and operation

## Program Requirements

### General Education

GENERAL EDUCATION courses must be completed with a letter 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)

## 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 and
- WLD 143 - Wire Drive Welding 1 and
- WLD 122 - Shielded Metal Arc Welding 2 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 is embedded in the Diesel Technology, AAS degree
- This program follows Certificate of Completion Requirements unless otherwise specified
- Co-op experience may be substituted for major coursework. For more information, please see your Academic Advisor or Program Coordinator.

## One-Year Certificates of Completion

Click on individual certificates to see specific program requirements. To see general requirements, go to Certificate of Completion Requirements.

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## Business Assistant, 1-yr Certificate

**Length:** One year, 54 credits

### Program Contacts

Offered by the Business Department

Program Coordinators: LuAnne Johnson ([johnsonl@lanecc.edu](mailto:johnsonl@lanecc.edu), 541.463.5767) and Chris Culver ([culverc@lanecc.edu](mailto:culverc@lanecc.edu), 541.463.5153)

Business Advising Team: [BusinessAdvising@lanecc.edu](mailto:BusinessAdvising@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

Cooperative Education: [lanecc.edu/cooped/contact](http://lanecc.edu/cooped/contact)

**Estimated Cost: \$10,425**

- Books/Course Materials - \$1,405
- Computers/Internet Service - \$1,500
- Online Course Fees - \$150
- Technology Fees - \$486
- Resident Tuition and General Student Fees - \$6,884

Tuition and fee estimates are based on the prior academic year's rates. Course fees may change during the year. Learn more and view updated tuition and fee information at [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

## 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:

- Understand accounting as the language of business
- Anticipate and actively explore innovative solutions to technological and organizational challenges
- Engage customers and co-workers in a purposeful manner listening to and accurately interpreting their responses within diverse cultural contexts
- Work independently within diverse business environments; apply individual strengths and critical thinking to collaborative efforts
- Use software including word processing, spreadsheets, databases, and presentation tools to input, manage, and interpret information to meet organizational needs
- Perform on the job in ways that reflect professional ethics, legal standards, and organizational expectations
- Create professional, accurate documents
- Provide basic training and technical support for office equipment and software systems
- Use research and analytical skills to support the activities of the organization
- Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them
- Make effective presentations to internal and external audiences
- Use appropriate library and information resources to research business topics
- Apply critical thinking and analytical skills in decision-making and problem solving
- Use good keyboarding skills to prepare documents quickly and accurately according to employer standards
- Organize and manage the daily business functions of a business/organization

## Program Requirements

### General Education

GENERAL EDUCATION courses must be completed with a letter grade of C- or better, or Pass.

**Writing (4 credits):** WR 121 - Academic Composition or WR 121\_H - Academic Composition-Honors

**Math (4 credits):** MTH 065 - Elementary Algebra or higher.

### Program Core Courses

- 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 163 - QuickBooks 4 Credit(s)
- BT 165 - Introduction to the Accounting Cycle 4 Credit(s)
- BT 206 - Co-op Ed: Business Seminar 2 Credit(s)

Complete one of the following (4 credits):

- BA 281 - Personal Finance 4 Credit(s)

or

- BT 144 - Administrative Procedures 4 Credit(s)

Complete one of the following (4 credits):

- CS 120 - Concepts of Computing: Information Processing 4 Credit(s)

or

- CIS 101 - Computer Fundamentals 4 Credit(s)

### Notes

- This program is embedded in the Business Management, AAS degree.
- 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.
- If Math is taken in the self-paced format through the Math Resource Center, then all credits must be completed to meet the math requirement.

## Commercial Baking and Pastry, 1-yr Certificate

**Length:** One year, 45 credits

### Program Contacts

Offered by the Culinary Arts and Hotel/Restaurant/Tourism Management department

Program Coordinator: Wendy Milbrat, [milbratw@lanecc.edu](mailto:milbratw@lanecc.edu), 541.462.3518

Academic Advising Team: [CulinaryHospPrograms@lanecc.edu](mailto:CulinaryHospPrograms@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

### Estimated Cost: \$7,707

- Books/Materials - \$350
- \*Differential Fees - \$916
- Program-Specific Fees - \$686
- Uniforms - \$145
- Resident Tuition and General Student Fees - \$5,610

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition). \*This is the total of all the differential fees attached to the courses in this program.

### Learning Outcomes

This program is for students who wish to gain entry into the food service industry as a beginning baking and pastry cook. 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:

- Develop essential and advanced baking and pastry knowledge and skills.
- Operate equipment including cook tops, food processors, ovens (baking, convection, and conventional), dough mixers and a variety of kitchen tools.
- Gain a broad understanding of the culinary arts and hotel/restaurant/tourism management industry and the various segments that comprise the industry.
- Perform mathematical functions related to food service operations.
- Gain understanding of nutrient functions, food sources and guidelines.
- Develop an understanding of global sustainability and environmental movements, and their impact on the hospitality industry.

## Program Requirements

### General Education

**General Education** courses must be completed with a grade of C- or better, or Pass; and may be completed prior to program entry or during any program term.

**Writing (4 credits) - Complete one of the following:**

- WR 115 - Introduction to College Composition 4 Credit(s)
- Any Writing course higher than WR 115

**Math (3-5 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 course higher than MTH 025

**Human Relations (3-4 credits) - Complete one of the following:**

- CG 100 - College Success 1-3 Credit(s) (Recommended)
- 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** courses must be completed with a letter grade of C- or better. P/ NP is not accepted

- 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)

Note: CA 163 may be substituted for CA 163A + CA 163B + CA 163C.

- 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 175 - Foodservice Sanitation and Safety 2 Credit(s)
- FN 105 - Nutrition for Foodservice Professionals 3 Credit(s)
- HRTM 100 - Introduction to Culinary and Hospitality 3 Credit(s)
- HRTM 105 - Restaurant Operations 3 Credit(s)

## Cooperative Education

**Cooperative Education** must be completed with a letter grade of C- or better. P/ NP is not accepted. **Complete 5 credits of Cooperative Education.**

- CA 280 - Co-op Ed: Culinary Arts 1-7 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 2 credits of Program Electives from the following:**

- BI 103H - General Biology-Mushrooms 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)
- CA 130 - Culinary Adventuring: Oregon Wine Country 2 Credit(s)
- COMM 115 - Introduction to Intercultural Communication 4 Credit(s)
- COMM 130 - Business and Professional Communication 4 Credit(s)
- CS 120 - Concepts of Computing: Information Processing 4 Credit(s)
- FN 110 - Personal Nutrition 3 Credit(s)
- HRTM 104 - Introduction to Travel and Tourism 3 Credit(s)
- HRTM 109 - Principles of Meetings and Convention Management 3 Credit(s)
- HRTM 140 - Hospitality Law and Ethics 3 Credit(s)
- HRTM 205 - Managing the Restaurant Operation 3 Credit(s)
- HRTM 230 - Hotel Operations 1 3 Credit(s)
- HRTM 231 - Hotel Operations 2 3 Credit(s)
- HRTM 286 - Bar and Beverage Management 3 Credit(s)
- HST 104 - World History 4 Credit(s)
- HST 105 - World History 4 Credit(s)
- HST 106 - World History 4 Credit(s)
- PHL 201 - Ethics 4 Credit(s)
- SUST 101 - Introduction to Sustainability 3 Credit(s)

## Notes

- This program follows Certificate of Completion Requirements unless otherwise specified.
- A Lane County Food Handlers card is required for entry into the program.
- 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 ([koeningm@lanecc.edu](mailto:koeningm@lanecc.edu)) 541.463.5818, Bldng 11/244.
- This certificate is a fall term start only.

## Commercial Cooking, 1-yr Certificate

**Length:** One year, 45 credits

### Program Contacts

Offered by the Culinary Arts and Hotel/Restaurant/Tourism Management department

Program Coordinator: Wendy Milbrat, [milbratw@lanecc.edu](mailto:milbratw@lanecc.edu), 541.462.3518

Academic Advising Team: [CulinaryHospPrograms@lanecc.edu](mailto:CulinaryHospPrograms@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

### Estimated Cost: \$8,805

- Books/Materials - \$500
- \*Differential Fees - \$1,220
- Program-Specific Fees - \$918
- Uniforms - \$330
- Resident Tuition and General Student Fees - \$5,837

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition). \*This is the total of all the differential fees attached to the courses in this program.

## Learning Outcomes

The purpose of this program is to provide the basics that allow students to become competent in performing essential and primary tasks in commercial kitchen/restaurant operations. It is the first year of the two year AAS degree and allows student to progress to the higher degree if decided to pursue at a later time.

### Students who complete this program will be able to:

- Develop a broad range of culinary skills.
- Operate equipment including cook tops, food processors, ovens (baking, convection, and conventional), dough mixers, meat slicers, and a variety of kitchen tools.
- Gain basic understanding of culinary theory, cooking techniques and fundamentals, and practical
- Application of safety and sanitation concepts.
- Develop culinary understanding and skills through meat fabrication.
- Develop fundamental baking and pastry knowledge and skills.
- Gain a broad understanding of the culinary arts and hotel/restaurant/ tourism management industry and the various segments that comprise the industry.
- Understand the fundamentals of purchasing and receiving, menu planning and costing, and food and beverage controls.
- Gain understanding of nutrient functions, food sources and guidelines.

## Program Requirements

### General Education

**General Education** courses must be completed with a grade of C- or better, or Pass; and may be completed prior to program entry or during any program term.

**Writing (4 credits)** - Complete one of the following:

- WR 115 - Introduction to College Composition 4 Credit(s)
- Any Writing course higher than WR 115

**Math (3-5 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 course higher than MTH 025

**Human Relations (3-4 credits)** - Complete one of the following:

- CG 100 - College Success 1-3 Credit(s) (Recommended)
- 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** courses must be completed with a letter grade of C- or better. P/ NP not accepted.

- CA 160 - Introduction to Cooking Theories 1 7 Credit(s)
- CA 162 - Introduction to Cooking Theories 2 7 Credit(s)
- CA 163 - Introduction to Cooking Theories 3 7 Credit(s)
- Note: CA 163A + CA 163B + CA 163C may be substituted for CA 163.
- CA 175 - Foodservice Sanitation and Safety 2 Credit(s)
- FN 105 - Nutrition for Foodservice Professionals 3 Credit(s)
- HRTM 100 - Introduction to Culinary and Hospitality 3 Credit(s)
- HRTM 105 - Restaurant Operations 3 Credit(s)

## Cooperative Education

**Cooperative Education** must be completed with a letter grade of C- or better. P/ NP is not accepted. **Complete 3 credits of Cooperative Education.**

- CA 280 - Co-op Ed: Culinary Arts 1-7 Credit(s)

## Notes

- This program follows Certificate of Completion Requirements unless otherwise specified.
- A Lane County Food Handlers card is required for entry into the program.
- 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

([koeningm@lanecc.edu](mailto:koeningm@lanecc.edu)) 541.463.5818, Bldng 11/244.

- This certificate is a fall term start only.

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## Construction Technology, 1-yr Certificate

**Length:** One year, 46 credits

### Program Contacts

Offered by: Advanced Technology Division

Program Coordinator: Tracy Rea, [reat@lanecc.edu](mailto:reat@lanecc.edu), 541.463.5151

Advanced Technology Academic Advising Team: [advtechprograms@lanecc.edu](mailto:advtechprograms@lanecc.edu);  
drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

Cooperative Education: [lanecc.edu/cooped/contact](http://lanecc.edu/cooped/contact)

**Estimated Cost:** \$7,382

- Books - \$774
- Program-Specific Fees - \$225
- Resident Tuition and General Student Fees - \$6,383

Tuition and fee estimates are based on the prior academic year's rates. Course fees may change during the year. Learn more and view updated tuition and fee information at [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

## 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:

- Demonstrate basic carpentry skills for the construction industry.
- Cut, fit, and assemble wood and other materials for building construction.
- Demonstrate and use industry safety standards.
- Use blueprint reading skills necessary to the profession.
- Demonstrate knowledge of laser level and field elevations.
- Enter the workforce in the field of construction.

## Program Requirements

### General Education

GENERAL EDUCATION 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)

## 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)

## 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 your Academic Advisor or Program Coordinator.

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## Construction Trades, General Apprenticeship, 1-yr Certificate

**Length:** Varies depending on trade area

### Program Contacts

Offered by the Advanced Technology department

Program Coordinator: Joy Crump, [crumpj@lanecc.edu](mailto:crumpj@lanecc.edu), 541.463.5496

Academic Advising Team: [advtechprograms@lanecc.edu](mailto:advtechprograms@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

**Estimated Cost: \$9,249**

- Books/Materials - \$1,107
- Resident Tuition and General Student Fees - \$8,142

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

## 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 36-46 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:

- Apply theory as it relates to trade competencies
- 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](http://boli.state.or.us).

## Program Requirements

### General Education

GENERAL EDUCATION 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), choose 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)

## Program Core Courses

Complete all courses listed in one of the following trades. 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 (46 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 172 - Sheet Metal/HVAC/R Blueprint Reading 3 Credit(s)
- APR 173 - Sheet Metal Formulas 4 Credit(s)
- APR 185 - Shielded Metal Arc Welding 1 1-4 Credit(s) (take 1 credit of APR 185)
- APR 186 - Wire Drive Welding 1 1-4 Credit(s) (take 2 credits of APR 186)
- 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)

### 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.

## Dental Assisting, 1-yr Certificate

**Length:** One year, 49 credits

**Program Prerequisites:** 18-24 credits

### Program Contacts

Offered by Health Professions

Program Coordinator: Leslie Greer, [greerl@lanecc.edu](mailto:greerl@lanecc.edu), 541.463.5683

Health Professions Academic Advising Team: [DAProgram@lanecc.edu](mailto:DAProgram@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

Cooperative Education: [lanecc.edu/cooped/contact](http://lanecc.edu/cooped/contact)

**Estimated Cost:** \$13,259

- Books - \$600
- Certifications, Exams, Physicals, Equipment/Supply - \$4,317
- Differential Fees - \$1,393
- Uniforms - \$375
- Resident Tuition and General Student Fees - \$6,607

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition). \*This is the total of all the differential fees attached to the courses in this 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:

- Demonstrate knowledge and ability to write/edit multiple types of professional communications.
- Demonstrate knowledge and skill required to accurately expose, develop and mount diagnostic radiographs using multiple systems.
- Demonstrate knowledge and skills needed to compute mixing amounts and calculate formulas utilized in dental procedures.
- Demonstrate knowledge and skills required for business office procedures.
- Demonstrate knowledge and skills required to access information via dental journals and web sites.
- Demonstrate knowledge and skills required to systematically collect diagnostic data.
- Demonstrate knowledge and skills needed to maintain a professional working environment.
- Demonstrate knowledge and skills required to provide an aseptic environment and prevent disease transmission.
- Demonstrate application of principles of ethical reasoning, decision making and professional responsibility.
- Demonstrate interpersonal communication and collaborative skills to effectively interact with diverse population groups, health care providers, dental professionals and community groups.
- Demonstrate knowledge and skills required to perform or assist with a variety of clinical treatments used in all areas of dentistry.

### Admission Information

Contact the Health Professions Division or see [lanecc.edu/hp/dental/dental-assisting](http://lanecc.edu/hp/dental/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 includes possible exposure to blood borne pathogens and infectious diseases. Training is included to minimize risk to students and patients.

### Program Requirements

**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:

Prior bachelor's degree, verified by transcript from 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:

- 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)

### 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 and not required for program entry.

- HP 100 - Medical Terminology 1 3 Credit(s)
- HP 110 - Health Office Procedures 3 Credit(s)
- 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 6 credits of Cooperative Education.**

- 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).

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## Drafting, 1-yr Certificate

**Length:** One year, 45 credits

### Program Contacts

Offered by: Advanced Technology, [lanecc.edu/advtech](http://lanecc.edu/advtech)

Program Coordinator: Tracy Rea, [reat@lanecc.edu](mailto:reat@lanecc.edu), 541.463.5151

Advanced Technology Academic Advising: [AdvTechPrograms@lanecc.edu](mailto:AdvTechPrograms@lanecc.edu)

### Estimated Cost: \$7,222

- Books: \$937
- Program-Specific Fees: \$156
- Resident Tuition and General Student Fees: \$6,129

Tuition and fee estimates are based on the prior academic year's rates. Course fees may change during the year. Learn more and view updated tuition and fee information at [lanecc.edu/esfs/credittuition](http://lanecc.edu/esfs/credittuition).

## 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:

- Demonstrate basic competence in the use of CAD and solid modeling software.
- Visualize three-dimensional objects from multiple viewing directions and translate three-dimensional objects into two-dimensional drawings.
- Create mechanical and architectural drawings which follow recognized national standards for format, annotation, lines, and symbols.
- Communicate clearly in written, verbal, and graphic formats.

## Program Requirements

### General Education

GENERAL EDUCATION 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)

**Computer Literacy (4 credits):**

- CS 120 - Concepts of Computing: Information Processing 4 Credit(s)
- OR HIGHER CS course

## Program Core Courses

PROGRAM CORE courses 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 245 - Solid Modeling 4 Credit(s)
- ET 121 - Shop Practices 2 Credit(s)

**Cooperative Education Seminar (2 credits):**

Complete 2 credits of COOP 206 - Co-op Ed: Internship Seminar

## Program Electives

PROGRAM ELECTIVES must be completed with a grade of C- or better, or Pass.

**Complete 4-6 credits. Choose from the following:**

- ART 117 - Basic Design: 3-Dimensional 3 Credit(s)
- ART 216 - Digital Design Tools 3 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)
- CS 179 - Introduction to Computer Networks 4 Credit(s)
- CST 116 - Construction Estimating 4 Credit(s)
- CST 201 - Sustainable Building Practices 3 Credit(s)
- DS 154 - Heavy Duty Braking 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)
- GIS 151 - Digital Earth 4 Credit(s)
- GIS 245 - GIS 1 4 Credit(s)
- MFG 101 - Safety and Basic Shop Practice 3 Credit(s)
- MUL 101 - Introduction to Media Arts 3 Credit(s)
- MUL 212 - Digital Imaging 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)
- PH 201 - General Physics 5 Credit(s)
- PH 202 - General Physics 5 Credit(s)
- PH 203 - General Physics 5 Credit(s)
- WLD 143 - Wire Drive Welding 1 1-4 Credit(s)
- WLD 151 - Fundamentals of Metallurgy 1-3 Credit(s)

## 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:** One year, 45 credits

**Program Contacts**

Offered by the Social Science Division

Program Coordinator: Program Coordinator: Kathleen Lloyd, [lloydk@lanecc.edu](mailto:lloydk@lanecc.edu), 541.463.5287

Academic Advising Team: [EducationAdvising@lanecc.edu](mailto:EducationAdvising@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

Cooperative Education: Kathleen Lloyd, [lloydk@lanecc.edu](mailto:lloydk@lanecc.edu), 541.463.5287; [lanecc.edu/cooped/contact](http://lanecc.edu/cooped/contact)

**Estimated Cost: \$6,652**

- Books/Course Materials - \$1,650
- Resident Tuition and General Student Fees \$5,002

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

## 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:**

- Design a Reggio-inspired curriculum approach for children to learn to make appropriate choices and actively participate in their own learning.
- Apply age-appropriate guidance strategies so children develop empathy, moral autonomy, self-worth and the ability to self-regulate in challenging situations.
- Use basic mathematics in everyday life and business transactions, including measurement, introduction of probability and statistics, reading graphs and tables, and signed numbers.
- Develop and apply research skills to access information using print and online resources, including the library catalog and reference sources.

## Program Requirements

### General Education

GENERAL EDUCATION 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)

## 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-LCC Child-Care Center 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.
- 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](http://lanecc.edu/hsconnections/collegenow/courses-high-school)
- Students who do not meet reading and/or math requirements may apply to PASS Lane for alternative admission process. Contact Marcia Koenig ([koeningm@lanecc.edu](mailto:koeningm@lanecc.edu)) 541.463.5818, Bldg 11/244.
- 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) in the LCC Child Care Center. See the Program Coordinator for further information and to schedule your hours.

## Electrician Apprenticeship Technologies, 1-yr Certificate

**Length:** Varies depending on trade area

### Program Contacts

Offered by the Advanced Technology department

Program Coordinator: Joy Crump, [crumpj@lanecc.edu](mailto:crumpj@lanecc.edu), 541.463.5496

Academic Advising Team: [advtechprograms@lanecc.edu](mailto:advtechprograms@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

### Estimated Cost: \$9,515

- Books/Materials - \$1,300
- Resident Tuition and General Student Fees - \$8,215

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

## 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:

- Apply theory to electrical wiring.
- 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 EDUCATION 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), choose 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)

## Program Core Courses

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 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)
- 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.

## 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.

## Emergency Medical Technician, 1-yr Certificate

### Program Suspended

For students currently enrolled in the program, please contact Academic Advising at [EMTParamedicProgram@lanecc.edu](mailto:EMTParamedicProgram@lanecc.edu) for information about completing the program in a timely manner.

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## Energy Management Technician, 1-yr Certificate

**Length:** One year, 53 credits

### Program Contacts

Offered by the Science Division

Program Coordinator: Roger Ebbage, [ebbager@lanecc.edu](mailto:ebbager@lanecc.edu), 541.463.6160

Academic Advising Team: [Sci-MathPrograms@lanecc.edu](mailto:Sci-MathPrograms@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

### Estimated Cost: \$8,243

- Program-Specific Fees - \$1,000
- Resident Tuition and General Student Fees - \$7,243

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

## Learning Outcomes

The purpose of this program is to prepare individuals to apply basic engineering principles and technical skills in support of engineers and other professionals engaged in developing energy-efficient systems or monitoring energy use. Includes instruction in principles of energy conservation, instrumentation calibration, monitoring systems and test procedures, energy loss inspection procedure's energy conservation techniques, and report preparation. Equipped with the appropriate set of skills, an Energy Management Technician also oversees the energy purchase and consumption of a building (residential or commercial) or portfolio of buildings. The Energy Management Technician will make energy efficiency recommendations to building owners as a result of investment level 3 energy audits.

### Students who complete this program will be able to:

- Evaluate the energy use patterns for residential and commercial buildings and recommend energy efficiency measures and renewable energy solutions for high energy consuming buildings.
- Understand the interaction between energy consuming building systems and make energy use reduction recommendations based on that understanding.
- Construct energy evaluation technical reports and make presentations for potential project implementation
- Access library, computing and communications services, and obtain information and data from regional, national, and international networks
- Collect and display data as lists, tables, and plots using appropriate technology (e.g., excel and other computer software)
- Develop and evaluate inferences and predictions that are based on collected data.
- Interpret the concepts of a problem-solving task, and, using mathematics, translate concepts into energy-related projects.
- Use appropriate library and digital information resources to research professional objectives and support lifelong learning.
- Read and analyze building blueprints including floor, mechanical, and electrical plans.
- Read elevations, sections, schedules, and construction notes.

## Admission Information

Apply online at [lanecc.edu/science/energy-management](http://lanecc.edu/science/energy-management). Completion of MTH 065 or MTH 070, AND PH 102 (or Program Coordinator permission) must be obtained prior to enrolling in the program.

## Program Requirements

### General Education

GENERAL EDUCATION courses must be completed with a grade of C- or better, or Pass. It is recommended the following requirements be completed prior to entering the program.

#### Writing (4 credits).

- WR 227 - Technical Writing 4 Credit(s) or WR 227\_H

#### Math (5 credits). Complete one course.

- MTH 098 - Math Literacy 5 Credit(s) (recommended) or MTH 095 - Intermediate Algebra 5 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)

#### Physics (4 credits).

- PH 102 - Fundamentals of Physics 4 Credit(s)

## Program Core Courses

CORE courses must be completed with a grade of C- or better, or Pass.

- 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 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)
- 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)

## Notes

- This program follows Certificate of Completion Requirements unless otherwise specified.
- Completion of MTH 065 or MTH 070, AND PH 102 (or Program Coordinator permission) must be obtained prior to enrolling in the program.
- MTH 098 or MTH 095 may be taken any term.
- WR 227 and Human Relations may be taken any term.
- All NRG courses are offered fully online.
- Lane Community College does not offer PH 102 online. Physics 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 one year time frame. Please contact Program Coordinator and/or Academic Advisor to determine prescribed course sequence.

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## Fabrication/Welding, 1-yr Certificate

**Length:** One year, 46-49 credits

### Program Contacts

Offered by: Advanced Technology, [lanecc.edu/advtech](http://lanecc.edu/advtech)

Program Coordinator: Tracy Rea, [reat@lanecc.edu](mailto:reat@lanecc.edu), 541.463.5151

Advanced Technology Academic Advising: [AdvTechPrograms@lanecc.edu](mailto:AdvTechPrograms@lanecc.edu)

### Estimated Cost: \$8,953

- Books: \$755
- Tools: \$300
- Program-Specific Fees: \$1,642
- Resident Tuition and General Student Fees: \$6,256

Tuition and fee estimates are based on the prior academic year's rates. Course fees may change during the year. Learn more and view updated tuition and fee information at [lanecc.edu/esfs/credittuition](http://lanecc.edu/esfs/credittuition).

## 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:

- Read and build metal products from simple blueprints.
- Use blueprints and other reference materials to calculate cost of materials necessary to the building of metal products.
- Apply mathematics necessary to fabricate metal products.
- Perform at entry-level typical industrial welding processes.
- Demonstrate at entry-level use of certain machine tools commonly found in industry.
- Demonstrate and use industry safety standards.
- Use appropriate library and information resources to research professional issues and support lifelong learning.

## Program Requirements

### General Education

GENERAL EDUCATION 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)

**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, [simmonsw@lanecc.edu](mailto:simmonsw@lanecc.edu), 541.463.5551
- Fitness Lifestyle Specialist Advising Team: [FLSPProgram@lanecc.edu](mailto:FLSPProgram@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800
- Cooperative Education: [lanecc.edu/cooped/contact](http://lanecc.edu/cooped/contact)

**Estimated Cost: \$6,078**

- Books - \$390
- Resident Tuition and General Student Fees - \$5,688

Tuition and fee estimates are based on the prior academic year's rates. Course fees may change during the year. Learn more and view updated tuition and fee information at [lanecc.edu/ests/credit-tuition](http://lanecc.edu/ests/credit-tuition).

**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, wellness coaching.

**Students who complete this program will be able to:**

- Administer various basic fitness assessments including the measurement of cardiovascular endurance, body composition, flexibility, muscular strength and endurance in gym or health club settings.
- Apply and interpret basic algebraic formulas to fitness assessment data and exercise programming.
- Demonstrate interpersonal skills in the areas of leadership, motivation, and communication.
- Design and demonstrate safe and effective exercise programs for apparently healthy individuals and groups within current fitness industry standards and best practices.
- Respond to the needs of a diverse clientele and demonstrate inclusive practices.
- Understand and apply basic behavior modification strategies to enhance exercise and health behavior change with clients.
- Understand and apply basic exercise principles related to applied

kinesiology, physiology, injury prevention, conditioning, resistance training, and functional training.

- Understand and apply nationally recognized standards for fitness and overall health and describe the benefits and precautions associated with exercise.
- Understand 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 Requirements****General Education**

GENERAL EDUCATION 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)

**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.

**Personal or Global Health (3-4 credits) - Complete one of the following:**

- HE 222 - Consumer Health 3 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)

**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 Group Exercise Instructor, CPC
- This program follows the Certificate of Completion Requirements unless otherwise specified.
- Program application must be completed prior to enrollment in PE 280F - Co-op Ed: Fitness. Apply at [lanecc.edu/healthpe/fitness-specialist-information](http://lanecc.edu/healthpe/fitness-specialist-information)
- FLS 160 - Applied Anatomy and Kinesiology offered Winter Term. Students must pass FLS 160 to register for FLS 190 - Injury Prevention and Management.

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## Health Information Management (online), 1-yr Certificate

**Length:** One year, 45 credits

**Program Prerequisites:** 21 credits

### Program Contacts

Offered by the Health Professions Division

Program Coordinator: Shelley Williams, BA, RN, RHIT; [williamssk@lanecc.edu](mailto:williamssk@lanecc.edu); 541.463.5182

Health Information Management Academic Advising Team: [HIMProgram@lanecc.edu](mailto:HIMProgram@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

Cooperative Education: [lanecc.edu/cooped/contact](http://lanecc.edu/cooped/contact)

### Estimated Cost: \$8,307

- Books/Course Materials - \$1,170
- Technology Fees - \$27
- Online Course Fees - \$300
- Resident Tuition and General Student Fees - \$5,310

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

## 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:

- Demonstrate ability to organize, input, process, analyze, secure, and distribute healthcare information.
- Demonstrate the organization, analysis, and evaluation of health record content for completeness and accuracy.
- 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.
- Apply principles of healthcare privacy, confidentiality, legal, ethical issues and data security.
- Demonstrate knowledge of healthcare terminology and medical conditions.
- Demonstrate knowledge of healthcare delivery systems and regulatory environments.
- 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.
- 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 [lanecc.edu/hp/him/admissions-and-application](http://lanecc.edu/hp/him/admissions-and-application)

## Program Requirements

### Prerequisites

PREREQUISITES must be completed with a 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.

- WR 115 - Introduction to College Composition 4 Credit(s) or WR 115W, or higher
- MTH 052 - Math for Health and Physical Sciences 4 Credit(s) or higher
- HP 100 - Medical Terminology 1 3 Credit(s)
- HP 150 - Human Body Systems 1 3 Credit(s)
- HP 152 - Human Body Systems 2 3 Credit(s)

### Complete one of the following (4 credits):

- CS 120 - Concepts of Computing: Information Processing 4 Credit(s)
- CIS 101 - Computer Fundamentals 4 Credit(s)

## Program Core Courses

CORE courses must be completed with a grade of C or better. P/NP is not accepted.

- 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)

### Human Relations (4 credits). Complete one of the following

- BA 278 - Leadership and Team Dynamics
- COMM 130 - Business and Professional Communication
- COMM 218 - Interpersonal Communication
- COMM 219 - Small Group Communication
- COMM 260 - Introduction to Conflict Management 4 Credit(s)

## Cooperative Education

COOPERATIVE EDUCATION courses must be completed with a grade of C or better. P/NP is not accepted.

- Complete 2 credits of COOP 206 - Co-op Ed: Internship Seminar
- Complete 3 credits of HIT 280 - Co-op Ed: Health Records (HIM 280 will be accepted as a substitute)

## Notes

- This is the parent program for the 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 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.
- All program prerequisites can be completed online.
- HIM 222 - Reimbursement Methodologies must be completed within five years of the start of the governing catalog.
- For students who completed the Medical Coding Career Pathway Certificate, the HIM coding sequence (HIM 270, HIM 271, and HIM 273) plus one prerequisite computer literacy course (CIS 101, or CS 120) may be substituted for HIM 114 - Introduction to Medical Coding.
- 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.
- 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 ([koeningm@lanecc.edu](mailto:koeningm@lanecc.edu)) 541.463.5818, Bldg 11/244.
- BA 278 - Leadership and Team Dynamics with a letter grade of C or better (P/NP not accepted) is required for the AAS: Health Information Management degree. Students planning to pursue the AAS should take BA 278 to meet the Human Relations requirement.
- 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. 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 and have their coop requirements met, and instructor approval prior to registering. Contact the HIM Cooperative Education Coordinator, Shelley Williams, Room 210, Bldg. 30, 541.463.5182.

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## Industrial Mechanics and Maintenance Technology Apprenticeship, 1-yr Certificate

**Length:** 54 credits

### Program Contacts

Offered by the Advanced Technology department

Program Coordinator: Joy Crump, [crumpj@lanecc.edu](mailto:crumpj@lanecc.edu), 541.463.5496

Academic Advising Team: [advtechprograms@lanecc.edu](mailto:advtechprograms@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

**Estimated Cost: \$9,720**

- Books/Materials - \$1,275
- Resident Tuition and General Student Fees - \$8,445

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

### 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:**

- Perform the duties and responsibilities of the millwright trade.
- 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](http://boli.state.or.us).

### Program Requirements

#### General Education

GENERAL EDUCATION 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 MTH 075 - Applied Algebra for Technicians 4 Credit(s)

#### Human Relations (3-4 credits), choose 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)

### Program Core Courses

Complete all courses listed in the following trade. CORE courses must be completed with a letter grade of C or better. P/NP is not accepted.

#### Millwright (43 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) (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)
- MTH 085 - Applied Geometry for Technicians 4 Credit(s)

### Notes

- This program follows Certificate of Completion Requirements unless otherwise specified.

### 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.

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## Medical Assistant, 1-yr Certificate

**Program Length:** One year, 48 credits

**Program Prerequisites:** 21 credits

### Program Contacts

Offered by Health Professions Division

Program Coordinator: Marty Pittman, [pittmanm@lanecc.edu](mailto:pittmanm@lanecc.edu), 541.463.5617

Academic Advising Team: [MAProgram@lanecc.edu](mailto:MAProgram@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

Cooperative Education: [lanecc.edu/cooped/contact](http://lanecc.edu/cooped/contact)

**Estimated Cost: \$10,559**

- Books - \$3,858
- Certification, Exams, Physicals - \$125
- \*Differential Fees - \$504
- Resident Tuition and General Student Fees - \$6,072

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition). \*This is the total of all the differential fees attached to the courses in this 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:**

- Prepare patients for examination or treatment; take temperatures, measure height and weight, and accurately record information in the patient chart.
- Physically assist patients onto and off of exam table.
- Sterilize instruments and stand by to assist as the physician examines or treats patients, or performs in-office surgeries.
- Give medical care to patients, under the physician's supervision, such as giving injections and drawing blood.
- Perform certain diagnostic testing in the laboratory.
- Perform administrative duties, which include managing an appointment schedule, organizing patients' medical records, bookkeeping procedures, and processing insurance claims.
- Use library resources for research and written assignments for a variety of purposes.
- Perform mathematic equations associated with medication dosages as well as basic mathematics to process medical insurance claims.

### Admission Information

Students are encouraged to consult a program advisor or counselor before applying for admission. The application and information on the point allocation system and transfer students is available in the Counseling and Advising Center and on the Medical Assistant website, [lanecc.edu/hp/medical-assistant](http://lanecc.edu/hp/medical-assistant)

### Program Requirements

**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 (3-4 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)

Human Relations (3-4 credits) - Complete one of the following:

- CG 203 - Human Relations at Work 1-3 Credit(s)
- COMM 218 - Interpersonal Communication 4 Credit(s)
- EMS 102 - Crisis Intervention 3 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. The following course may be completed with a C- or Pass: BT 165.

BT 165 - Introduction to the Accounting Cycle 4 Credit(s)

- HP 110 - Health Office Procedures 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)
- MA 110 - Clinical Assistant 1 3 Credit(s)
- MA 112 - Medical Insurance Procedures 3 Credit(s)
- MA 119 - Introduction to Medical Coding and Scribing 3 Credit(s)
- MA 120 - Clinical Assistant 2 3 Credit(s)
- MA 130 - Clinical Assistant 3 3 Credit(s)
- MA 150 - Laboratory Orientation 3 Credit(s)

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](mailto: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; [caahep.org](http://caahep.org); 727.210.2350

## Multimedia Design, 1-yr Certificate

**Length:** One year, 46 credits

Offered by the Division of the Arts

Program Coordinator: Contact the Division, Bldg. 11, Room 101, 541.463.5411

Arts Academic Advising Team: [ArtsPrograms@lanecc.edu](mailto:ArtsPrograms@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

Cooperative Education: [lanecc.edu/cooped/contact](http://lanecc.edu/cooped/contact)

**Estimated Cost: \$7,597**

- Books/Course Materials - \$1,700
- Resident Tuition and General Student Fees - \$5,897

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

## 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:**

- Understand the concepts, potential, and implications of communicating ideas using computer-based media technology.
- Become proficient in developing and applying effective visual design strategies for creating interactive multimedia, animation, games, web sites, and photography for business, education, and entertainment industries.
- Use appropriate library and information resources to research media issues, concepts and tools, and support lifelong technical learning.
- Design digital projects incorporating multiple forms of media such as text, graphics, audio, video, and animation.
- Produce, manipulate, and process digital content using computer software applications.

## Program Requirements

### General Education

**General Education** 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
- 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)

### Program Core Courses

All of the following courses must be completed with a letter grade of B- or higher. P/NP is not accepted.

- ART 216 - Digital Design Tools 3 Credit(s)
- AUD 120 - Audio Production 4 Credit(s)
- FA 250 - Concepts of Visual Literacy 3 Credit(s)
- MUL 105 - Digital Photography 4 Credit(s)
- VP 151 - Video Production 1: Camera 3 Credit(s)

All of the following courses must be completed with a grade of C- or better. P/ NP is not accepted.



- ART 115 - Basic Design: Fundamentals 3 Credit(s)
- ART 245 - Drawing for Media 4 Credit(s)
- FA 221 - Computer Animation 4 Credit(s)
- MUL 101 - Introduction to Media Arts 3 Credit(s)
- MUL 103 - Time-Based Tools 4 Credit(s)

## Notes

- This program follows the Certificate of Completion Requirements unless otherwise specified.
- This program is fully contained in the Multimedia Design, AAS degree.
- Students using lower-credit courses to meet General Education requirements may need to take additional credits to meet the 45-credit minimum.

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## Occupational Skills Training, 1-yr Certificate

**Length:** One year, 45 credits

Program Contacts

Offered by the Career Pathways office

Program Coordinator: Rosa Lopez; [lopezr@lanecc.edu](mailto:lopezr@lanecc.edu); 541.463.4726

Cooperative Education: [lanecc.edu/cooped/contact](http://lanecc.edu/cooped/contact); 541.463.5203

- Cooperative Education Coordinator for Occupational Skills: Shamra Clark; [clarks@lanecc.edu](mailto:clarks@lanecc.edu); 541.463.5008
- Cooperative Education Dean: Deron Fort

**Estimated Cost: \$6,850\***

- Books/Course Materials: \$750
- Resident Tuition and General Student Fees: \$6,100

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

\*Course fees and materials/books for the Occupational Skills program will vary based on individual student contracts. Students will have a contract in place prior to beginning the 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:**

- Complete occupation-specific classes and work site education/training
- Formulate questions that can be addressed with data and collect, organize and display relevant data to answer them
- Gain knowledge and skills to prepare for employment in a chosen occupation
- Improve communication, human relations, and critical thinking and problem-solving abilities
- Interpret the concepts of a problem-solving task and translate them into mathematics
- Learn and enhance vocabulary and communication skills relevant to their individualized program and career plan
- Learn to research labor market trends and employment opportunities relevant to their career plan
- 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](http://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

### General Education

GENERAL EDUCATION courses must be completed with a letter grade of C- or better, or Pass.

**Writing (3-4 credits), choose one of the following:**

- WR 115W - Introduction to College Writing: Workplace Emphasis 3 Credit(s)
- WR 115 - Introduction to College Composition 4 Credit(s)
- or any higher Writing course

**Math (3 credits)**

- MTH 025 - Basic Mathematics Applications 3 Credit(s) or higher Math course.

**Human Relations (3-4 credits), choose 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)

### Program Core Courses

CORE courses must be completed with a letter grade of C- or better. P/NP not accepted. Up to 6 credits of GWE 180 - Co-op Ed: General Work Experience may be substituted for 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.
- Ongoing career coaching is required as part of this program.

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## Practical Nursing, 1-yr Certificate

**Program Length:** One year, 45 credits

**Program Prerequisites:** 23-24 credits

Program Contacts

Offered by the Health Professions Division

Program Coordinator: Maggie Kruit, [kruitm@lanecc.edu](mailto:kruitm@lanecc.edu), 541.463.5753

Academic Advising Team: [NursingProgram@lanecc.edu](mailto:NursingProgram@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

Cooperative Education: [lanecc.edu/cooped/contact](http://lanecc.edu/cooped/contact)

**Estimated Cost: \$14,530**

- Books - \$675
- Certification, Licensure, Exams, Physicals - \$248
- Computers/Internet Service - \$850
- \*Differential Fees - \$3,931
- Program-Specific Fees - \$2,727
- Resident Tuition and General Student Fees - \$6,099

Course tuition and fees may change during the year. Learn more and view updated tuition and fee information at [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition). \*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.

## 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:**

- Identify issues and care for clients in multiple healthcare settings
- Demonstrate 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
- Pathophysiology, medical management and nursing intervention in caring for clients with all conditions to include acute, chronic, obstetrics, psychiatric and terminal illnesses
- Understand the principles of pharmacodynamics and pharmacokinetics

## Admission Information

For information about this program and the application packet, please see [lanecc.edu/hp/nursing/licensed-practical-nursing](http://lanecc.edu/hp/nursing/licensed-practical-nursing)

Drug testing, criminal back-ground check and immunizations required. Information on criminal background checks and disqualifying crimes can be found at the Oregon Board of Nursing at: <https://secure.sos.state.or.us/oard/displayDivisionRules.action?selectedDivision=3929>

## Program Requirements

**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)** - Complete one of the following:

- MTH 052 - Math for Health and Physical Sciences 4 Credit(s)
- MTH 065 - Elementary Algebra 4 Credit(s)
- MTH 095 - Intermediate Algebra 5 Credit(s)
- MTH 105 - Math in Society 4 Credit(s)
- or higher-level MTH course
- 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. PN 101A meets the Human Relations requirement and cannot be substituted. It is recommended students complete WR 121 and WR 122 prior to 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.

## Accreditation

Practical Nursing, accredited by the Oregon State Board of Nursing (OSBN), 17938 SW Upper Boones Ferry Rd., Portland, OR 97163-0685, [oregon.gov/osbn](http://oregon.gov/osbn).

## 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:** One year, 45 credits

Offered by the Division of the Arts

Program Coordinator: Contact the Division, Bldg. 11, Room 101, 541.463.5411

Arts Academic Advising Team: [ArtsPrograms@lanecc.edu](mailto:ArtsPrograms@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

Cooperative Education: [lanecc.edu/cooped/contact](http://lanecc.edu/cooped/contact)

**Estimated Cost: \$7,097**

- Books/Course Materials - \$1,200
- Resident Tuition and General Student Fees - \$5,897

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

## 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:**

- Learn to use appropriate library and information resources to research media topics and issues, concepts and tools, and support lifelong technical and aesthetic learning.
- Manipulate variables using computer software applications.
- Understand the concept, potential and implications of communicating ideas using computer-based interactive media technology.
- Understand the concepts of media and its effect on society, and how to use media ethically.
- Become proficient in developing and applying effective visual design strategies for creating web sites, interactive multimedia, animation, games, and computer-based training for deliver over the Internet, DVD's and CD-Rom. Develop additional skills in one or more elective areas: software, design, or media.
- Develop proficiency in multiple forms of media design which includes writing for the web, graphic and web design, online content, working with visual imagery, video, sound and animation.

## Program Requirements

### General Education

**General Education** 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)

## Program Core Courses

All of the following courses must be completed with a letter grade of B- or better. P/NP is not accepted.

- ART 216 - Digital Design Tools 3 Credit(s)
- ART 289 - Web Production 3 Credit(s)
- CIS 195 - Web Authoring 1 4 Credit(s)
- MUL 212 - Digital Imaging 4 Credit(s)

All of the following courses must be completed with a letter grade of C- or better. P/NP is not accepted.

- ART 115 - Basic Design: Fundamentals 3 Credit(s)
- ART 245 - Drawing for Media 4 Credit(s)
- ART 290 - Design Concepts for the Web 3 Credit(s)
- CS 133JS - Beg. Programming: JavaScript 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. P/ NP is not accepted. **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.

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## Welding Processes, 1-yr Certificate

**Length:** One year, 47-53 credits

### Program Contacts

Offered by: Advanced Technology, [lanecc.edu/advtech](http://lanecc.edu/advtech)

Program Coordinator: Tracy Rea, [reat@lanecc.edu](mailto:reat@lanecc.edu), 541.463.5151

Advanced Technology Academic Advising: [AdvTechPrograms@lanecc.edu](mailto:AdvTechPrograms@lanecc.edu)

**Estimated Cost: \$9,829**

- Books: \$704
- Tools: \$385
- Program-Specific Fees: \$1,976
- Resident Tuition and General Student Fees: \$6,764

Tuition and fee estimates are based on the prior academic year's rates. Course fees may change during the year. Learn more and view updated tuition and fee information at [lanecc.edu/esfs/credittuition](http://lanecc.edu/esfs/credittuition).

## 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:**

- Read simple blueprints, interpret and apply industrial welding symbols.
- Demonstrate proficiency at an industry entry-level with Shielded Metal Arc Welding, various wire drive processes and Gas Tungsten Arc Welding.
- Weld and cut metal as is typical of circumstances found in industrial environments.
- Demonstrate and use industry safety standards.

## Program Requirements

### General Education

GENERAL EDUCATION 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)

## 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 1-4 Credit(s)

- WLD 122 - Shielded Metal Arc Welding 2 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

**Take 1-4 credits of Program Electives.** 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.

- DRF 160 - Computer-Aided Drafting and Design 4 Credit(s)
- ENGR 280W - Co-op Ed: Welding 3-12 Credit(s)
- MFG 101 - Safety and Basic Shop Practice 3 Credit(s)
- MTH 060 - Beginning Algebra 4 Credit(s)
- MTH 075 - Applied Algebra for Technicians 4 Credit(s)
- Any Math course higher than MTH 075
- 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 142 - Pipe Welding Lab: Carbon Steel 3 Credit(s)

## Notes

- This is the parent program for Shielded Metal Arc Welder, CPC and 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.

# Career Pathway Certificates of Completion

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## Addiction Studies, CPC

**Length:** Three terms, 24 credits

### Program Contacts

Offered by the Social Science Division

Program Coordinator: Susan Shipp, [shipp@lanecc.edu](mailto:shipp@lanecc.edu), 541.463.5231

Academic Advising Team: [socsci-llcprograms@lanecc.edu](mailto:socsci-llcprograms@lanecc.edu), drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

Cooperative Education: [lanecc.edu/cooped/contact](http://lanecc.edu/cooped/contact)

**Estimated Cost: \$3,000**

- Books/Course Materials - \$500
- Resident Tuition and General Student Fees - \$2,500

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

## 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. State certification also requires successfully completing a written exam, two years of sobriety prior to internship placement or employment in an addictions field, with a minimum of 2 years of recovery for those who are recovering from a Substance Use Disorder.

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:**

- Understand addiction.
- Conduct evaluations and assessments.
- Gain knowledge and treatment.



- Demonstrate cultural competency in working with people from diverse backgrounds.
- Develop and demonstrate appropriate professionalism.
- Develop interview skills.
- Develop a plan of action using a strengths-based approach to coordinate services that align with level of care.
- Develop and apply documentation skills.

## Program Requirements

### Program Core Courses

CORE courses must be completed with a letter grade of C- or better. P/NP is not accepted.

- 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 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:** Complete 3 credits of HS 280 - Cooperative Education: Human Services

**Prerequisite:** HS 150

### 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 - Case Management, and is recommended prior to enrollment in HS 224 - Group Counseling Skills.
- HS 150 - Personal Effectiveness for Human Service Workers must be completed prior to enrollment in HS 280 - Cooperative Education: Human Services and HS 226 - Ethics and Law is recommended prior to beginning your Cooperative Education placement.
- Cooperative Education: Students are required to attend a co-op orientation prior to beginning their field placement. Contact Christina Salter, Co-op Coordinator at [salterc@lanecc.edu](mailto:salterc@lanecc.edu) or 541.463.5813.

## Basic Health Care, CPC

**Length:** One year, 24 credits

### Program Contacts

Offered by the Health Professions Division

Program Coordinator: Shelley Williams, BA, RN, RHIT; [williamssk@lanecc.edu](mailto:williamssk@lanecc.edu); 541.463.5182

Health Information Management Academic Advising Team: [HIMProgram@lanecc.edu](mailto:HIMProgram@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

**Estimated Cost: \$5,085**

- Books/Course Materials - \$560
- Technology Fees - \$18
- Online Course Fees - \$175
- Resident Tuition and General Student Fees - \$3,025

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

### 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:**

- Understand the requirements to work as a professional in a health care environment.
- Demonstrate basic computer skills.
- Apply the principles and privacy and security based on laws and professional ethics required in health care practices.
- Demonstrate ability to use medical terminology appropriately, including abbreviations, acronyms, spelling, and pronunciation.
- Demonstrate knowledge on the basics of human anatomy and physiology.
- Demonstrate professional written and verbal communications in a responsible and confidential manner.
- 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

- CORE courses must be completed with a letter grade of C or better. P/NP is not accepted.
- WR 115 - Introduction to College Composition 4 Credit(s) or higher
- MTH 052 - Math for Health and Physical Sciences 4 Credit(s) or higher Math course
- 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)

Complete one of the following (4 credits):

- CIS 101 - Computer Fundamentals 4 Credit(s)
- CS 120 - Concepts of Computing: Information Processing 4 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.
- Students planning to pursue the HIM program or the 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.
- 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 ([koeningm@lanecc.edu](mailto:koeningm@lanecc.edu)) 541.463.5818, Bldng 11/244.

## Commercial Unmanned Aerial Systems: Aerial Photography, CPC

**Length:** 12 credits

### Program Contacts

Offered by Lane Aviation Academy

Program Coordinator: Walter (Sean) Parrish, Chief Flight Instructor, [parrishw@lanecc.edu](mailto:parrishw@lanecc.edu), 541.463.4323

Academic Advising Team: [advtechprograms@lanecc.edu](mailto:advtechprograms@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

**Estimated Cost: \$3,406**

- Books - \$400
- Certification, Licensure, Exams, Physicals - \$150
- Program-Specific Fees - \$1,440
- Resident Tuition and General Student Fees - \$1,416

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

### Learning Outcomes

The purpose of this program is to prepare students for successful careers in Aerial Photography in Unmanned Aerial Systems (UAS).

### Students who complete this program will have:

- An extensive knowledge of the National Airspace System and the integration of Unmanned Aerial Systems within it.
- Knowledge and experience with hobby grade and advanced commercial sensors and equipment.
- Knowledge to safely pilot multi-copters in normal and emergency flight operations.
- Ability to properly plan and execute commercial missions unsupervised.

## Program Requirements

### Program Core Courses

FT courses 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.

Ground School (6 credits) - Complete both of the following:

- FT 123 - Commercial UAS Ground School 1 Credit(s)
- FT 250 - Private Pilot Ground School 5 Credit(s)

UAS Flight Labs (2 credits) - Complete both of the following:

- FT 124A - UAS Flight Lab 1 Credit(s)
- FT 124B - UAS Flight Lab 1 Credit(s)

Photography (4 credits) - Complete one of the following:

- ART 282 - Landscape and Architectural Photography 4 Credit(s)
- MUL 105 - Digital Photography 4 Credit(s)

### Notes

- This program follows Career Pathway Certificate of Completion Requirements unless otherwise specified.
- This program is fully contained in the Commercial Unmanned Aerial Systems, AAS degree.

### Licensing and Certification

Commercial FAA Unmanned Aerial Systems (UAS) Part 107 license

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## Commercial Unmanned Aerial Systems: Geographic Information Science, CPC

**Length:** 25 credits

### Program Contacts

Offered by Lane Aviation Academy

Program Coordinator: Walter (Sean) Parrish, Chief Flight Instructor, [parrishw@lanecc.edu](mailto:parrishw@lanecc.edu), 541.463.4323

Academic Advising Team: [advtechprograms@lanecc.edu](mailto:advtechprograms@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

**Estimated Cost: \$6,500**

- Books - \$600
- Certification, Licensure, Exams, Physicals - \$150
- Program-Specific Fees - \$2,800
- Resident Tuition and General Student Fees - \$2,950

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

### Learning Outcomes

The purpose of this program is to prepare students for successful careers in Geographic Information Science in Unmanned Aerial Systems (UAS).

#### Students who complete this program will have:

- An extensive knowledge of the National Airspace System and the integration of Unmanned Aerial Systems within it.
- Knowledge and experience with hobby grade and advanced commercial sensors and equipment.
- Ability to work within a crew/team environment.
- Knowledge to safely pilot multi-copters in normal and emergency flight operations.
- Ability to properly plan and execute commercial missions unsupervised.

## Program Requirements

### Program Core Courses

FT courses must be completed with a letter grade of C- or better. P/NP is not accepted. GIS courses must be completed with a grade of C- or better, or Pass.

- FT 123 - Commercial UAS Ground School 1 Credit(s)

- FT 230 - UAS Data Acquisition and Analysis 3 Credit(s)
- FT 250 - Private Pilot Ground School 5 Credit(s)

UAS Flight Labs (4 Credits)

- FT 124A - UAS Flight Lab 1 Credit(s)
- FT 124B - UAS Flight Lab 1 Credit(s)
- FT 124C - UAS Flight Lab 1 Credit(s)
- FT 124D - UAS Flight Lab 1 Credit(s)

GIS Courses (12 Credits)

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

### Notes

- This program follows Career Pathway Certificate of Completion Requirements unless otherwise specified.
- This program is fully contained in the Commercial Unmanned Aerial Systems, AAS degree.

### Licensing and Certification

Commercial FAA Unmanned Aerial Systems (UAS) Part 107 license, Pix4D certification.

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## Computer Network Monitoring and Management, CPC

**Length:** 16 credits

### Careers and Employment Opportunities

Learn about careers, wages, and current opportunities using the Career Pathways Roadmap for this program.

### Program Contacts

Offered by the Computer and Information Technology department

Program Coordinator: Joseph Colton, [coltonj@lanecc.edu](mailto:coltonj@lanecc.edu), 541.463.5249

CIT Academic Advising Team: [CITPrograms@lanecc.edu](mailto:CITPrograms@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

**Estimated Cost: \$2,186**

- Program Specific Fees - \$26
- Tuition and General Student Fees - \$2,160

Tuition and fee estimates are based on the prior academic year's rates. Course fees may change during the year. Learn more and view updated tuition and fee information at [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

### 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:

- Understand the performance fundamentals required to keep computer networks efficient
- Install and configure Windows and Linux servers and Cisco routers and switches
- Identify sources of network performance problems and resolve them
- Implement the SNMP protocol on various networked devices
- Understand the importance of proactive management and planning for growth
- Install and configure an enterprise network monitoring package to track performance and availability of services
- Implement event handlers and notification/alert systems
- 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.

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)

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## Computer Network Security, CPC

### Program Suspended

For students currently enrolled in the program, please contact Academic Advising at [CITPrograms@lanecc.edu](mailto:CITPrograms@lanecc.edu) for information about completing the program in a timely manner.

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## Construction Trades, General Apprenticeship: Trade Worker Apprenticeship Technologies, CPC

**Length:** Varies depending on trade area

### Program Contacts

Offered by the Advanced Technology department

Program Coordinator: Joy Crump, [crumpj@lanecc.edu](mailto:crumpj@lanecc.edu), 541.463.5496

Academic Advising Team: [advtechprograms@lanecc.edu](mailto:advtechprograms@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

### Estimated Cost: \$3,950

- Books/Materials - \$640
- Resident Tuition and General Student Fees - \$3,310

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

### 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](http://boli.state.or.us).

### 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:

- Apply theory as it relates to trade competencies.
- Successfully complete all required core related-training with a grade of C or better for individual trade.
- Perform the duties and responsibilities of the individual construction trade/occupation.
- Repair, install, and maintain a variety of building construction projects using trade specific tools and techniques in compliance with building codes and OSHA regulations.

### Program Requirements

#### Program Core Courses

Complete all courses listed in one of the following trades. 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 credits 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.

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## Database Specialist, CPC

**Length:** Three terms, 16 credits

### Program Contacts

Offered by the Computer and Information Technology department

Program Coordinator: Brian Bird, [birdb@lanecc.edu](mailto:birdb@lanecc.edu), 541.463.3024

CIT Academic Advising Team: [CITPrograms@lanecc.edu](mailto:CITPrograms@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

### Estimated Cost (if taking CS 161N and CS 162N): \$2,717

- Books/Materials - \$531
- Program Specific Fees - \$26
- Tuition and General Student Fees - \$2,160

### Estimated Cost (if taking CS 161P and CS 162P): \$2,186

- Books/Materials - \$0
- Program Specific Fees - \$26
- Tuition and General Student Fees - \$2,160

Tuition and fee estimates are based on the prior academic year's rates. Course fees may change during the year. Learn more and view updated tuition and fee information at [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

### 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:

- Design, implement, test, debug and document relational database systems using a variety of current tools and technologies.
- Understand the use of database to support organizational processes.
- Translate database related problems into SQL logic and expressions.
- 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.

##### Databases (8 credits) - Complete both of the following:

- CS 275 - Basic Database SQL 4 Credit(s)
- CS 276 - Database System and Modeling 4 Credit(s)

Computer Science Sequence - Complete one of the following options:

##### Option 1: C# (8 credits)

- CS 161N - Computer Science 1 4 Credit(s)
- CS 162N - Computer Science 2 4 Credit(s)

##### Option 2: C++ (8 credits)

- CS 161C - Computer Science 1 4 Credit(s)
- CS 162C - Computer Science 2 4 Credit(s)

##### Option 3: Python (8 credits)

- CS 161P - Computer Science 1 4 Credit(s)
- CS 162P - Computer Science 2 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' taking their first programming language (C, N, or P) will take CS 161/162. Because CS 161/162 are not repeatable courses, upon taking a second programming language, students must use the CS 133/233 course numbers. CS 161/162 are the courses listed in catalog degree requirements but CS 133/233 will be accepted as well. For help with this, contact the department or academic advisors.

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## Drafting for Commercial Construction, CPC



**Length:** 16 credits

### Program Contacts

Offered by: Advanced Technology, [lanecc.edu/advtech](http://lanecc.edu/advtech)

Program Coordinator: Tracy Rea, [reat@lanecc.edu](mailto:reat@lanecc.edu), 541.463.5151

Advanced Technology Academic Advising: [AdvTechPrograms@lanecc.edu](mailto:AdvTechPrograms@lanecc.edu)

**Estimated Cost: \$2,709**

- Books: \$311
- Program-Specific Fees: \$80
- Resident Tuition and General Student Fees: \$2,318

Tuition and fee estimates are based on the prior academic year's rates. Course fees may change during the year. Learn more and view updated tuition and fee information at [lanecc.edu/esfs/credittuition](http://lanecc.edu/esfs/credittuition).

## 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:**

- Demonstrate knowledge of architectural drawing standards.
- Demonstrate familiarity with the components of a typical set of construction documents
- Demonstrate understanding of the basic concepts of external forces and equilibrium
- Use graphical methods or simple trigonometry to calculate forces on beams, trusses, and columns.
- Demonstrate understanding of 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.

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## Drafting for Manufacturing, CPC

**Length:** 12 credits

### Program Contacts

Offered by: Advanced Technology, [lanecc.edu/advtech](http://lanecc.edu/advtech)

Program Coordinator: Tracy Rea, [reat@lanecc.edu](mailto:reat@lanecc.edu), 541.463.5151

Advanced Technology Academic Advising: [AdvTechPrograms@lanecc.edu](mailto:AdvTechPrograms@lanecc.edu)

**Estimated Cost: \$2,240**

- Books: \$248
- Program-Specific Fees: \$60
- Resident Tuition and General Student Fees: \$1,810

Tuition and fee estimates are based on the prior academic year's rates. Course fees may change during the year. Learn more and view updated tuition and fee information at [lanecc.edu/esfs/credittuition](http://lanecc.edu/esfs/credittuition).

## 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:**

- Demonstrate knowledge of mechanical dimensioning and tolerancing standards.
- Use computer-aided drafting software to create mechanical drawings.
- 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.

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## Drafting for Residential Construction, CPC

**Length:** 12 credits

### Program Contacts

Offered by: Advanced Technology, [lanecc.edu/advtech](http://lanecc.edu/advtech)

Program Coordinator: Tracy Rea, [reat@lanecc.edu](mailto:reat@lanecc.edu), 541.463.5151

Advanced Technology Academic Advising: [AdvTechPrograms@lanecc.edu](mailto:AdvTechPrograms@lanecc.edu)

**Estimated Cost: \$2,240**

- Books: \$370
- Program-Specific Fees: \$60
- Resident Tuition and General Student Fees: \$1,810

Tuition and fee estimates are based on the prior academic year's rates. Course fees may change during the year. Learn more and view updated tuition and fee information at [lanecc.edu/esfs/credittuition](http://lanecc.edu/esfs/credittuition).

## 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:**

- Use computer-aided drafting software to create residential construction documents.
- Demonstrate knowledge of architectural drawing standards.
- Demonstrate understanding of the basic concepts of external forces, equilibrium, and structural components
- Use graphical methods or simple trigonometry to calculate 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.

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## Early Childhood Teacher Aide, CPC

**Length:** 17 credits

### Program Contacts

Offered by the Social Science Division

Program Coordinator: Program Coordinator: Kathleen Lloyd, [lloydk@lanecc.edu](mailto:lloydk@lanecc.edu), 541.463.5287

Academic Advising Team: [EducationAdvising@lanecc.edu](mailto:EducationAdvising@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

**Estimated Cost: \$3,800**

- Books/Course Materials - \$600
- Resident Tuition and General Student Fees \$3,200

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

## 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:**

- Develop a creative imagination to understand suitable art forms to offer young children.
- Explain theories of development relating to the early years.
- Express and understand the use of guidance that supports moral autonomy in young children.
- Identify state rules and regulations regarding health and safety which govern licensing of early childhood programs.
- Demonstrate in a supervised lab school setting awareness of consistent, appropriate guidance and developmentally appropriate.

## 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-LCC Child-Care Center 4 Credit(s)

### Notes

- This program follows Career Pathway Certificate of Completion Requirements.
- This program is fully contained in the Early Childhood Education, AAS.
- 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](http://lanecc.edu/hsconnections/collegenow/courses-high-school)
- 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 ([koeningm@lanecc.edu](mailto:koeningm@lanecc.edu)) 541.463.5818, Bldg 11/244.
- 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. See Program Coordinator for details.

## Electrician Apprenticeship Technologies: Trade Worker Apprenticeship Technologies, CPC

**Length:** Varies depending on trade area

### Program Contacts

Offered by the Advanced Technology department

Program Coordinator: Joy Crump, [crumpj@lanecc.edu](mailto:crumpj@lanecc.edu), 541.463.5496

Academic Advising Team: [advtechprograms@lanecc.edu](mailto:advtechprograms@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

**Estimated Cost: \$3,165**

- Books/Materials - \$560
- Resident Tuition and General Student Fees - \$2,605

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

## 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:**

- Apply theory to electrical systems.

- 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](http://boli.state.or.us).

## Program Requirements

### Program Core Courses

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 maximum 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.

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## 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](mailto:birdb@lanecc.edu), 541.463.3024

CIT Academic Advising Team: [CITPrograms@lanecc.edu](mailto:CITPrograms@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

**Estimated Cost: \$3,068**

- Books/Materials - \$92
- Program Specific Fees - \$104
- Tuition and General Student Fees - \$2,872

Tuition and fee estimates are based on the prior academic year's rates. Course fees may change during the year. Learn more and view updated tuition and fee information at [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

## 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:**

- Design and build attractive web sites using HTML and CSS.
- Design and build interactive web sites using client-side JavaScript.
- Design and build interactive web sites using modern JavaScript features,

libraries and frameworks.

- Understand and apply object-oriented programming concepts.
- Evaluate your own web site implementation work and the work of other students.
- Provide constructive feedback orally and in writing.

## Program Requirements

### Program Core Courses

**Program Core** courses must be completed with a letter grade of C- or better. P/ NP is not accepted.

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)

Computer Science (8 credits) - Complete both of the following:

- CS 161N - Computer Science 1 4 Credit(s)
- CS 162N - Computer Science 2 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' taking their first programming language (C, N, or P) will take CS 161/162. Because CS 161/162 are not repeatable courses, upon taking a second programming language, students must use the CS 133/233 course numbers. CS 161/162 are the courses listed in catalog degree requirements but CS 133/233 will be accepted as well. For help with this, contact the department or academic advisors.

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## Group Exercise Instructor, CPC

**Length:** Two terms, 18 credits

### Program Contacts

Offered by: Health and Physical Education

Program Coordinator: Wendy Simmons, [simmonsw@lanecc.edu](mailto:simmonsw@lanecc.edu), 541.463.5551

Fitness Lifestyle Specialist Advising Team: [FLSProgram@lanecc.edu](mailto:FLSProgram@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

Cooperative Education: [lanecc.edu/cooped/contact](http://lanecc.edu/cooped/contact)

**Estimated Cost: \$1,795**

- Books - \$250
- Resident Tuition and General Student Fees - \$1,545

Tuition and fee estimates are based on the prior academic year's rates. Course fees may change during the year. Learn more and view updated tuition and fee information at [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

### 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:**

- Demonstrate excellent interpersonal skills in the areas of leadership, exercise motivation, and communication (written, verbal, and non-verbal).
- Design, evaluate, and instruct safe and effective group exercise classes utilizing a variety of exercise modalities.
- Understand the role of proper nutrition and training techniques as they relate to physical fitness and weight management.
- Apply nationally recognized standards for group exercise instruction.
- Appropriately modify and adapt group classes to meet the needs of a variety of participants.
- Communicate to participants the benefits, risks, and precautions involved with participation in group exercise.
- Identify and communicate the unique benefits of group exercise in the health and fitness industry.
- Identify and implement risk management strategies and safety precautions to ensure a safe and productive exercise experience for all participants.

## 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 credit) - Complete 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.)

### 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.
- Program application must be completed prior to enrollment in PE 280F - Co-op Ed: Fitness. Apply at [lanecc.edu/healthpe/fitness-specialist-information](http://lanecc.edu/healthpe/fitness-specialist-information)
- HE 252 - First Aid may be substituted for HE 161 - Cardiopulmonary Resuscitation.

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## Guidance and Curriculum, CPC

**Length:** 20 credits

### Program Contacts

Offered by the Social Science Division

Program Coordinator: Program Coordinator: Kathleen Lloyd, [lloydk@lanecc.edu](mailto:lloydk@lanecc.edu), 541.463.5287

Academic Advising Team: [EducationAdvising@lanecc.edu](mailto:EducationAdvising@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

**Estimated Cost: \$3,800**

- Books/Course Materials - \$600
- Resident Tuition and General Student Fees \$3,200

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

### 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:**

- Analyze teaching experiences and goals, then match planning to philosophy of teaching and educational practice.
- Explain theories of development relating to the early years.
- Express and understand the use of developmentally appropriate guidance.
- Identify developmental characteristics and developmental needs of young children in the areas of physical, intellectual, emotional, social and language development.

## 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-LCC Child-Care Center 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.
- 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](http://lanecc.edu/hsconnections/collegenow/courses-high-school)
- 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 ([koeningm@lanecc.edu](mailto:koeningm@lanecc.edu)) 541.463.5818, Bldg 11/244.
- 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. See Program Coordinator for details.

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## Industrial Mechanics and Maintenance Technology Apprenticeship: Trade Worker Apprenticeship Technologies, CPC

**Length:** 15 credits

### Program Contacts

Offered by the Advanced Technology department

Program Coordinator: Joy Crump, [crumpj@lanecc.edu](mailto:crumpj@lanecc.edu), 541.463.5496

Academic Advising Team: [advtechprograms@lanecc.edu](mailto:advtechprograms@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

### Estimated Cost: \$2,490

- Books/Materials - \$200
- Resident Tuition and General Student Fees - \$2,290

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

## 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:

- 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](http://boli.state.or.us).

## Program Requirements

### Program Core Courses

Complete all courses listed in the following trade. 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

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## Infant and Toddler, CPC

**Length:** 17 credits

### Program Contacts

Offered by the Social Science Division

Program Coordinator: Program Coordinator: Kathleen Lloyd, [lloydk@lanecc.edu](mailto:lloydk@lanecc.edu), 541.463.5287

Academic Advising Team: [EducationAdvising@lanecc.edu](mailto:EducationAdvising@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

### Estimated Cost: \$3,800

- Books/Course Materials - \$600
- Resident Tuition and General Student Fees \$3,200

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

## 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:

- Choose suitable equipment and materials for infants and toddlers.
- Express and understand the use of developmentally appropriate guidance.
- Identify developmental characteristics and developmental needs of infants and toddlers in the areas of physical, intellectual, emotional, social and language development.
- Identify state rules and regulations which 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-LCC Child-Care Center 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.
- 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](http://lanecc.edu/hsconnections/collegenow/courses-high-school)
- 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 ([koeningm@lanecc.edu](mailto:koeningm@lanecc.edu)) 541.463.5818, Bldg 11/244.
- 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. See program Program Coordinator for details.

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## Manufacturing Technician 1, CPC

**Length:** 18 credits

### Program Contacts

Offered by: Advanced Technology Division

Program Coordinator: Tracy Rea, [reat@lanecc.edu](mailto:reat@lanecc.edu), 541.463.5151

Advanced Technology Academic Advising Team: [advtechprograms@lanecc.edu](mailto:advtechprograms@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

Cooperative Education: [lanecc.edu/cooped/contact](http://lanecc.edu/cooped/contact)

### Estimated Cost: \$3,712

- Books - \$175
- \*Differential Fees - \$762
- Instruments/Tools - \$25
- Program-Specific Fees - \$306
- Resident Tuition and General Student Fees - \$2,444

Tuition and fee estimates are based on the prior academic year's rates. Course fees may change during the year. Learn more and view updated tuition and fee information at [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition). \*This is the total of all the differential fees attached to the courses in this 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:**

- Operate safely in a manufacturing environment.
- Use precision measuring tools effectively.
- Read prints and have mathematical skills to accomplish shop tasks.
- Use the bandsaw, mill and lathe, both manual and CNC with entry-level experience.

## Program Requirements

### Program Core Courses

CORE courses must be completed with a grade of C- or better. P/NP is not accepted. Enrollment in MFG 101 and CNC 101 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

- This program is fully contained in the Manufacturing Technology, AAS degree
- 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.

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## Manufacturing Technician 2, CPC

**Length:** 36 credits

### Program Contacts

Offered by: Advanced Technology Division

Program Coordinator: Tracy Rea, [reat@lanecc.edu](mailto:reat@lanecc.edu), 541.463.5151

Advanced Technology Academic Advising Team: [advtechprograms@lanecc.edu](mailto:advtechprograms@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

Cooperative Education: [lanecc.edu/cooped/contact](http://lanecc.edu/cooped/contact)

**Estimated Cost: \$7,398**

- Books - \$225
- \*Differential Fees - \$1,525
- Instruments/Tools - \$50
- Program-Specific Fees - \$612
- Resident Tuition and General Student Fees - \$4,986

Tuition and fee estimates are based on the prior academic year's rates. Course fees may change during the year. Learn more and view updated tuition and fee information at [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition). \*This is the total of all the differential fees attached to the courses in this program.

### Program Core Courses

CORE courses must be completed with a grade of C- or better. P/NP is not accepted. Enrollment in MFG 101 and CNC 101 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

- This program is fully contained in the Manufacturing Technology, AAS degree
- 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.

### 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:**

- Operate safely in a manufacturing environment.
- Use precision measuring tools effectively.
- Read prints and have the mathematical skills to accomplish tasks.
- Use most manual shop machinery and have been introduced to programming, setup and operation of CNC lathes and mills.

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## Medical Coding (online), CPC

**Length:** Three terms, 42 credits

**Total Program Prerequisites:** 21 credits

### Program Contacts

Offered by the Health Professions Division

Program Coordinator: Shelley Williams, BA, RN, RHIT; [williamssk@lanecc.edu](mailto:williamssk@lanecc.edu); 541.463.5182

Health Information Management Academic Advising Team: [HIMProgram@lanecc.edu](mailto:HIMProgram@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

**Estimated Cost: \$8,208**

- Books/Course Materials - \$1,100
- Certification, Licensure, Exams, Physicals - \$350
- Computers/Internet Services - \$1,500
- Technology Fees - \$27
- Online Course Fees - \$275
- Resident Tuition and General Student Fees - \$4,956

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

### 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:**

- Identify career and lifelong learning opportunities.
- Apply principles of healthcare privacy, confidentiality, legal, ethical issues, and data security (HIPAA regulatory standards).
- Communicate both verbally and written form with others of the health care team in an effective, appropriate, and capable manner.
- Demonstrate understanding of the etiology, pathology, symptoms, signs, diagnostic studies, treatment modalities, and prognosis of diseases and procedures to be coded.
- 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.
- 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 [lanecc.edu/hp/him](http://lanecc.edu/hp/him)

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## 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.

- WR 115 - Introduction to College Composition 4 Credit(s) or WR 115W, or higher
- MTH 052 - Math for Health and Physical Sciences 4 Credit(s) or higher
- HP 100 - Medical Terminology 1 3 Credit(s)
- HP 150 - Human Body Systems 1 3 Credit(s)
- HP 152 - Human Body Systems 2 3 Credit(s)

Complete one of the following (4 credits):

- CIS 101 - Computer Fundamentals 4 Credit(s)
- CS 120 - Concepts of Computing: Information Processing 4 Credit(s)

### Program Core Courses

CORE courses must be completed with a letter grade of C or better. P/NP is not accepted. All courses can be completed online.

- 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 courses must be completed with a grade of C or better. P/NP is not accepted.

- Complete 2 credits of COOP 206 - Co-op Ed: Internship Seminar
- Complete 3 credits of HIT 280 - Co-op Ed: Health Records (HIM 280 will be accepted as a substitute)

### 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 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.
- 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.
- 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.
- 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 ([koeningm@lanecc.edu](mailto:koeningm@lanecc.edu)) 541.463.5818, Bldng 11/244.

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## Meeting, Convention, and Special Events Manager, CPC

### Program Suspended

For students currently enrolled in the program, please contact Academic Advising at [culinaryhospprograms@lanecc.edu](mailto:culinaryhospprograms@lanecc.edu) for information about completing the program in a timely manner.

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## Mobile Application Development, CPC

**Length:** Three terms, 16 credits

### Careers and Employment Opportunities

Learn about careers, wages, and current opportunities using the Career Pathways Roadmap for this program.

### Program Contacts

Offered by the Computer and Information Technology department

Program Coordinator: Brian Bird, [birdb@lanecc.edu](mailto:birdb@lanecc.edu), 541.463.3024

CIT Academic Advising Team: [CITPrograms@lanecc.edu](mailto:CITPrograms@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

### Estimated Cost: \$2,358

- Books/Materials - \$92
- Program Specific Fees - \$104
- Tuition and General Student Fees - \$2,160

Tuition and fee estimates are based on the prior academic year's rates. Course fees may change during the year. Learn more and view updated tuition and fee information at [lanecc.edu/ests/credit-tuition](http://lanecc.edu/ests/credit-tuition).

### Learning Outcomes

The purpose of this program is to prepare technicians for entry-level positions as mobile application programmers.

#### Students who complete this program will be able to:

- Design, implement, test, debug and document mobile application based computer programs using a variety of current tools and technologies.
- Understand the use of mobile application programming to support organizational processes.
- Interpret the mathematical concepts of a programming related problem-solving task and translate them into programming logic and expressions.
- Use appropriate library and information resources to research programming tools and 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. Students completing the AAS: Computer Programming degree must complete Computer Science 1 & 2 with a grade of B- or better. P/NP not accepted.

- CS 161N - Computer Science 1 4 Credit(s)
- CS 162N - Computer Science 2 4 Credit(s)
- CS 235AM - Intermediate Mobile Application Development: Android 4 Credit(s)
- CS 235IM - Intermediate Mobile Applications Development: IOS 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' taking their first programming language (C, N, or P) will take CS 161/162. Because CS 161/162 are not repeatable courses, upon taking a second programming language, students must use the CS 133/233 course numbers. CS 161/162 are the courses listed in catalog degree requirements but CS 133/233 will be accepted as well. For help with this, contact the department or academic advisors.

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## Music Technology and Sound Engineering: MIDI and Audio Production, CPC

**Length:** 39 credits

Offered by the Division of the Arts

Program Coordinators: Matthew Svoboda, [svobodam@lanecc.edu](mailto:svobodam@lanecc.edu), 541.463.5736; Hisao Watanabe, [watanabeh@lanecc.edu](mailto:watanabeh@lanecc.edu), 541.463.5019; Seth Mulvihill, [mulvihills@lanecc.edu](mailto:mulvihills@lanecc.edu), 541.463.5184

Arts Academic Advising Team: [ArtsPrograms@lanecc.edu](mailto:ArtsPrograms@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

### Estimated Cost: \$5,383

- Books/Course Materials - \$600
- Program-Specific Fees - \$400
- Resident Tuition and General Student Fees - \$4,383



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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

## 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:

- Demonstrate proficiency using software and hardware for recording, editing and processing music and audio for commercial and artistic purposes.
- Identify and use a variety of microphones, preamplifiers, and other outboard signal processors. Demonstrate skill in microphone selection and placement.
- Demonstrate understanding of technical vocabulary associated with MIDI and MIDI software.
- Demonstrate understanding of technical vocabulary associated with audio engineering.
- Demonstrate knowledge of MIDI basics including: MIDI networks, MIDI synthesizers, and MIDI sequencers.
- Engineer and produce recording sessions for many instruments and styles.
- Create high quality audio mixes for a variety commercial and creative purposes.
- Demonstrate proficiency in keyboards and/or another instrument.
- Demonstrate knowledge and practical use of various studio file formats (AIFF, MP3).

## Program Requirements

### Program Core Courses

CORE courses must be completed with a letter grade of C- or better. P/NP not accepted.

- AUD 120 - Audio Production 4 Credit(s)
- MUS 101 - Music Fundamentals 3 Credit(s)
- MUS 107 - Audio Engineering 1 3 Credit(s)
- MUS 109 - Audio Engineering 2 4 Credit(s)
- MUS 110 - Audio Engineering 3 4 Credit(s)
- MUS 111 - Music Theory 1 (First Term) 4 Credit(s)
- MUS 114 - Sight-reading and Ear Training (First Term) 2 Credit(s)
- MUS 118 - Music Technology MIDI/Audio 1 4 Credit(s)
- MUS 119 - Music Technology MIDI/Audio 2 4 Credit(s)
- MUS 127 - Keyboard Skills 1 (First Term) 2 Credit(s)
- MUS 131 - Group Piano 2 Credit(s)

### Individual Lessons: Complete any 100-level MUP course.

- MUP 100 - Individual Lessons 1-2 Credit(s)
- Ensemble Courses

ENSEMBLE courses must be completed with a grade of C- or better, or Pass.

### Complete one course, selected from the list below.

- 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.
- Music Theory Placement exam required to get into MUS 111. Contact music office at 541.463.3108 for exam 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.

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## Music Technology and Sound Engineering: MIDI Production, CPC

Length: 20 credits

Offered by the Division of the Arts

Program Coordinators: Matthew Svoboda, [svobodam@lanecc.edu](mailto:svobodam@lanecc.edu), 541.463.5736; Hisao Watanabe, [watanabeh@lanecc.edu](mailto:watanabeh@lanecc.edu), 541.463.5019; Seth Mulvihill, [mulvihills@lanecc.edu](mailto:mulvihills@lanecc.edu), 541.463.5184

Arts Academic Advising Team: [ArtsPrograms@lanecc.edu](mailto:ArtsPrograms@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

### Estimated Cost: \$2,900

- Books/Course Materials - \$300
- Program-Specific Fees - \$400
- Resident Tuition and General Student Fees - \$2,200

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

## 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:

- Demonstrate proficiency using software and hardware for recording, editing and processing MIDI data for commercial and artistic purposes.
- Demonstrate knowledge of MIDI basics including: MIDI networks and MIDI sequencers.
- Use a variety of synthesizers, virtual instruments, and keyboards with MIDI software.
- Demonstrate understanding of technical vocabulary associated with MIDI and MIDI software.
- Show at least basic proficiency in keyboards and/or another instrument.
- Use basic keyboard skills and music theory knowledge to create MIDI projects and mixes.
- Demonstrate knowledge and practical use of various studio file formats (AIFF, MP3).

## Program Requirements

### Program Core Courses

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: Complete any 100-level MUP course.

- MUP 100 - Individual Lessons 1-2 Credit(s)
- Ensemble Courses

ENSEMBLE courses must be completed with a grade of C- or better, or Pass.

### Complete one course, selected from the list below.

- 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.

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## Shielded Metal Arc Welder, CPC

Length: 14-15 credits

### Program Contacts

Offered by: Advanced Technology, [lanecc.edu/advtech](http://lanecc.edu/advtech)

Program Coordinator: Tracy Rea, [reat@lanecc.edu](mailto:reat@lanecc.edu), 541.463.5151

Advanced Technology Academic Advising: [AdvTechPrograms@lanecc.edu](mailto:AdvTechPrograms@lanecc.edu)

**Estimated Cost: \$3,149**

- Books: \$267
- Program-Specific Fees: \$630
- Resident Tuition and General Student Fees: \$2,252

Tuition and fee estimates are based on the prior academic year's rates. Course fees may change during the year. Learn more and view updated tuition and fee information at [lanecc.edu/esfs/credittuition](http://lanecc.edu/esfs/credittuition).

**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:**

Demonstrate proficiency at a industry entry-level with Shielded Metal Arc Welding.

Weld and cut metal as is typical of circumstances found in industrial environments.

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 1-4 Credit(s)
- WLD 122 - Shielded Metal Arc Welding 2 1-4 Credit(s)

One Welder Qualification (CERT) course from the following:

- WLD 141 - Welder Qualification (Cert): SMAW
- WLD 140 - Welder Qualification (Cert): Wire Drive Processes

**Geometry - 1 course:**

- One geometry course from the following:
- MTH 085 - Applied Geometry for Technicians
- MTH 097 - Geometry
- MTH 112 - Trigonometry
- NOTE: MFG 101 or 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.

**Wire Drive Welder, CPC**

**Length:** 14-15 credits

**Program Contacts**

Offered by: Advanced Technology, [lanecc.edu/advtech](http://lanecc.edu/advtech)

Program Coordinator: Tracy Rea, [reat@lanecc.edu](mailto:reat@lanecc.edu), 541.463.5151

Advanced Technology Academic Advising: [AdvTechPrograms@lanecc.edu](mailto:AdvTechPrograms@lanecc.edu)

**Estimated Cost: \$3,253**

- Books: \$279
- Program-Specific Fees: \$722
- Resident Tuition and General Student Fees: \$2,252

Tuition and fee estimates are based on the prior academic year's rates. Course fees may change during the year. Learn more and view updated tuition and fee information at [lanecc.edu/esfs/credittuition](http://lanecc.edu/esfs/credittuition).

**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:**

- Demonstrate proficiency at an industry entry level with Shielded Metal Arc Welding.

- Weld and cut metal as is typical of circumstances found in industrial environments.
- 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:

- 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
- MTH 097 - Geometry
- MTH 112 - Trigonometry
- NOTE: MFG 101 or 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.

**Short-Term Certificates****Baking and Pastry, Certificate of Completion**

**Length:** One year, 22 credits

**Program Contacts**

Offered by the Culinary Arts and Hotel/Restaurant/Tourism Management department

Program Coordinator: Wendy Milbrat, [milbratw@lanecc.edu](mailto:milbratw@lanecc.edu), 541.462.3518

Academic Advising Team: [CulinaryHospPrograms@lanecc.edu](mailto:CulinaryHospPrograms@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

**Estimated Cost: \$4,851**

- Books/Materials - \$250
- \*Differential Fees - \$916
- Program-Specific Fees - \$686
- Resident Tuition and General Student Fees - \$2,999

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition). \*This is the total of all the differential fees attached to the courses in this 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:**

- Develop essential and advanced baking and pastry knowledge and skills.
- Operate equipment including cook tops, food processors, ovens (baking, convection, and conventional), dough mixers and a variety of kitchen tools.
- Perform mathematical functions related to food service operations.

## Program Requirements

### General Education

**Math** must be completed with a grade of C- or better, or Pass; and may be taken prior to program entry or during any program term.

Math (3-5 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 course higher than MTH 025

### Program Core Courses

**Program Core** courses must be completed with a letter grade of C- or better. P/ NP is not accepted.

- 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)
- Note: CA 163 may be substituted for CA 163A + CA 163B + CA 163C.
- 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 175 - Foodservice Sanitation and Safety 2 Credit(s)

### Notes

- This program follows Career Pathway Certificate of Completion Requirements unless otherwise specified.
- A Lane County Food Handlers card is required for entry into the program.
- 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 ([koeningm@lanecc.edu](mailto:koeningm@lanecc.edu)) 541.463.5818, Bldg 11/244.
- This certificate is a fall term start only.

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## Educational Assistant, Certificate of Completion

Length: Three terms, 28 credits

### Program Contacts

Offered by the Social Science Division

Program Coordinator: Contact Social Science, 541.463.5427

Academic Advising Team: [EducationAdvising@lanecc.edu](mailto:EducationAdvising@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

### Estimated Cost: \$4,440

- Books/Course Materials - \$500
- Resident Tuition and General Student Fees - \$3,940

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

### 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 curricula 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:

- 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
- Apply social/emotional theories of healthy child development in order to sustain an emotionally safe classroom environment
- Differentiate the physical, cognitive and social/emotional developmental stages of middle childhood and adolescence
- Exhibit proficiency in reading, writing and mathematics
- Demonstrate awareness of classroom communities consisting of

culturally sustaining and broadly diverse backgrounds

- 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 EDUCATION 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 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

CORE courses must be completed with a grade of C- or better, or Pass.

Intro to Education - Complete one of the following:

- ED 100 - Introduction to Education 3 Credit(s)
- ED 200 - Foundations of Education Seminar 3 Credit(s)

Adolescent or Child Development - Complete one of the following:

- ED 233 - Adolescent Learning and Development 3 Credit(s)
- HDFS 226 - Child Development 3 Credit(s)

Complete both of the following:

- ED 258 - Multicultural Education 3 Credit(s)
- ED 269 - Inclusion and Special Needs 3 Credit(s)

**Ethnic and racial issues - 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)

### Notes

- This program follows Certificate of Completion Requirements unless otherwise specified.

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## Geographic Information Science, Certificate of Completion

Length: 12 credits

### Program Contacts

Offered by the Social Science Division

Program Coordinator: Lynn Songer, [songerl@lanecc.edu](mailto:songerl@lanecc.edu), 541.463.5493

Academic Advising Team: [socsci-llcprograms@lanecc.edu](mailto:socsci-llcprograms@lanecc.edu), drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

### Estimated Cost: \$1,825

- Books/Course Materials - \$200
- Program-Specific Fees - \$105
- Resident Tuition and General Student Fees - \$1,520

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

### 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:

- Collect and input data into a GIS system using: GPS, Digitizing, Geocoding.
- Create, manage, and update spatial data.
- Design and generate various cartographic products for planning or



presentations.

- Manage information in a GIS database.
- Perform routine data analysis-buffer, query, union, intersect.

## Program Requirements

### Recommended Prerequisites

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. P/ NP is not accepted. 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 the Advanced Technology department

Program Coordinator: Joy Crump, [crumpj@lanecc.edu](mailto:crumpj@lanecc.edu), 541.463.5496

Academic Advising Team: [advtechprograms@lanecc.edu](mailto:advtechprograms@lanecc.edu); drop-in advising calendar [lanecc.edu/advising/drop-advising](http://lanecc.edu/advising/drop-advising); 541.463.3800

### Estimated Cost: \$4,250

- Books/Materials - \$585
- Resident Tuition and General Student Fees - \$3,665

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 [lanecc.edu/esfs/credit-tuition](http://lanecc.edu/esfs/credit-tuition).

### 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:

- 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

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 credits)

- APR 189 - Shop Practices 2 Credit(s)
- 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 credits of APR 190)
- APR 191 - Electrical Theory 2 1-4 Credit(s) (take 4 credits of APR 191)
- APR 285 - Motors 1-4 Credit(s) (take 4 credits of APR285)
- APR 286 - Motors 2 1-4 Credit(s) (take 4 credits of APR 286)

### Notes

This program follows Certificate of Completion Requirements unless otherwise specified.

### 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. Transfer Options

If you are interested in transferring, be sure to work with an academic advisor on the best options for you. You can also explore our Career Communities (each subject area includes transfer information) at [lanecc.edu/programs](http://lanecc.edu/programs).

## Core Transfer Maps

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 notated on your transcript please send an email with your request to [degreeevaluators@lanecc.edu](mailto:degreeevaluators@lanecc.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/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 statewide criteria for Cultural Literacy, as indicated by (*) 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.	Students must select one course from any of the discipline studies that is designated as meeting the statewide criteria for Cultural Literacy, as indicated by (*) 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.

## Other Learning Opportunities

### Academic Learning Skills

Main Campus, Building 11, Room 245, 541.463.5439, [lanecc.edu/als](http://lanecc.edu/als)

Academic Learning Skills (ALS) offers courses to improve student success in lower division, career technical, and transfer courses. ALS courses offer clear and direct articulation with courses required for the Associate of Arts Oregon Transfer degree. ALS coordinates class sequences and outcomes with the following departments and programs: Adult Basic and Secondary Education; English as a Second Language; Language, Literature and Communication; Health Careers; and Mathematics.

Students who take courses offered by Academic Learning Skills gain confidence and abilities to be successful in college-level 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 lecture and online formats. For more information about courses, see the Study Skills and College Prep heading in the course description section of this catalog. Other specialized courses may be found under the following headings in the course descriptions: Mathematics; and Writing.

**Developmental Credit Limit** Most of the courses in Academic Learning Skills are considered developmental courses. Students may be eligible to receive financial aid for up to 45-quarter credits (or equivalent) to complete developmental courses.

### Adult Basic and Secondary Education

Main Campus, Building 11, Room 201, 541.463.5214; Downtown Campus, Room 203, 541.463.6180, [lanecc.edu/abse](http://lanecc.edu/abse)

**College and GED Preparation:** Looking to build skills for a better job, prepare for college, and/or complete your GED? 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, 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. Let's get you started today!

## Cooperative Education

Main Campus, Building 19, Room 231, 541.463.5203, [lanecc.edu/cooped](http://lanecc.edu/cooped)

**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 what you learn in the classroom 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:

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.

- Work with your coordinator to set up a Co-op internship
- 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

[lanecc.edu/copps/documents/credit-prior-learning-procedure](http://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 providing 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

## English as a Second Language

Main Campus, Building 11, Room 242, 541.463.5253; Downtown Center, 2nd Floor, Room 203; [lanecc.edu/esl](http://lanecc.edu/esl)

The mission of English as a Second Language is to assist non-native speakers, 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. To learn more about ESL offerings, see English as a Second Language.

## High School Connections

Main Campus, Building 19, Room 231, 541.463.5521, [lanecc.edu/hconnections](http://lanecc.edu/hconnections)

### 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 similar to those offered in Lane programs, including course content, textbook and learning outcomes. Courses are taught in many subject areas, including art, business, construction, culinary, French, graphic design, health professions, manufacturing, math, science, Spanish, writing, and others. College Now credits are free for the 2020-21 academic year. Click here to view College Now course offerings by high school: [lanecc.edu/hconnections/collegenow/courses-high-school](http://lanecc.edu/hconnections/collegenow/courses-high-school)

**RTEC (Regional Technical and 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 a dedicated RTEC 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, test-taking strategies, and appropriate modes of communication in the college setting. Additionally, students are introduced to career technical pathways offered at Lane and will learn not only various career options, but also the varying requirements for entrance into these programs.

## Honors Program

[lanecc.edu/honors](http://lanecc.edu/honors) or email [honors@lanecc.edu](mailto: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 [lanecc.edu/laneonline](http://lanecc.edu/laneonline) or email [online@lanecc.edu](mailto: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. Some courses have on-campus labs or exams or require viewing video programs. If you can't take your exams on campus, you can find a proctor in your area. Tuition for LaneOnline courses is the same as other courses. Online courses and Hybrid have a \$10 per credit fee, up to a maximum of \$50 per course. Additional fees may be charged by instructional departments.

The Associate of Arts Oregon Transfer, AAOT Associate of General Studies, AGS, and Associate of Science, AS degrees and significant coursework for other degrees and certificates can be completed through LaneOnline. There is an annual course schedule on the LaneOnline website to assist you in schedule planning. 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 by going to [lanecc.edu/laneonline](http://lanecc.edu/laneonline) and clicking "Class Schedules" in the left-hand navigation bar, then choosing the desired term.

**Online Courses** Students may participate anytime, anywhere they have a computer with internet access. Interaction with the instructor and other students is provided through discussion forums and email. Some online courses have on-campus labs or exams, or require viewing video programs.

**Hybrid Courses** Hybrid courses combine traditional classroom activities with online learning so that time spent in the classroom is reduced but not eliminated. A portion of the class instruction is conducted online and the rest is conducted during regularly scheduled classroom meetings.

**Telecourses** Telecourses require viewing weekly video programs as well as reading, online assignments, and examinations. Videos can be streamed or viewed in the Lane Library, and at LCC at Cottage Grove and Florence. Exams are usually taken on campus.

**Live Interactive Courses** Students enroll and participate by attending on campus or through videoconferencing at an off campus location. These courses must be attended in person.

## Courses

### Academic Learning Skills

#### ALS 199 - Successful College Reading

1-3 Credit(s)

Emphasis on reading and study strategies for disciplinary specific texts. Introduction to discipline specific study methods and approaches to successfully read course textbooks and assessments, how to navigate information technology in the subject area, and how to develop rich academic vocabulary.

#### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Apply prior knowledge to aid in the integration and retention of new information
- Monitor and evaluate his/her growth as an active reader
- Apply appropriate reading strategies to college-level discipline-specific texts
- Vary reading strategies and reading rate according to the level of difficulty of the material
- Identify and use patterns of organizations in college level material and other discipline specific texts to aid in comprehension
- Employ various techniques to recognize, define, and use new or unfamiliar vocabulary to maximize reading comprehension and expand readers' vocabulary
- Evaluate the credibility of author's treatments in college level texts
- Organize and/or synthesize information from college level reading materials into usable notes and/or study materials
- Mark text selectively, ask questions of the text, respond to the text, and summarize the text



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## Aerospace Science

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### AS 111 - The Air Force Today

1 Credit(s)

Deals with the Air Force in the contemporary world through a study of the total force structure, strategic offensive and defensive forces, general purpose forces, and aerospace support forces.

### AS 112 - The Air Force Today

1 Credit(s)

Deals with the Air Force in the contemporary world through a study of the total force structure, strategic offensive and defensive forces, general purpose forces, and aerospace support forces.

### AS 113 - The Air Force Today

1 Credit(s)

Deals with the Air Force in the contemporary world through a study of the total force structure, strategic offensive and defensive forces, general purpose forces, and aerospace support forces.

### AS 120 - Leadership Laboratory

1 Credit(s)

Cadets learn officership, leadership, drill and ceremony, and customs and courtesies. Lec/lab. Graded P/N.

Only offered to students enrolled in the AFROTC officer commissioning program.

**Corequisite:** Taken concurrently with AS 111, AS 112 and AS 113.

### AS 211 - The Development of Air Power

1 Credit(s)

Study of air power from balloons and dirigibles through the jet age; a historical review of air power employment in military and non-military operations in support of national objectives; a study of changes in the nature of military conflict; and a look at the evolution of air power concepts and doctrine.

**Corequisite:** If enrolled in the AFROTC officer commissioning program, must be taken concurrently with AS 220.

### AS 212 - The Development of Air Power

1 Credit(s)

Study of air power from balloons and dirigibles through the jet age; a historical review of air power employment in military and non-military operations in support of national objectives; a study of changes in the nature of military conflict; and a look at the evolution of air power concepts and doctrine.

**Corequisite:** If enrolled in the AFROTC officer commissioning program, must be taken concurrently with AS 220.

### AS 213 - The Development of Air Power

1 Credit(s)

Study of air power from balloons and dirigibles through the jet age; a historical review of air power employment in military and non-military operations in support of national objectives; a study of changes in the nature of military conflict; and a look at the evolution of air power concepts and doctrine.

**Corequisite:** If enrolled in the AFROTC officer commissioning program, must be taken concurrently with AS 220.

### 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. Lec/lab. Graded P/N. 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.

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## American Sign Language

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### 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:

- 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.
- Apply language-learning skills to interactions in the Deaf community.
- Appreciate the linguistic and cultural diversity of Deaf people and behave with respect and understanding.

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### 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:

- Handle successfully a limited number of interactive, task-oriented and social situations.
- Ask and answer questions, initiate and respond to simple statements and generally maintain face-to-face conversation.
- Continue to apply language-learning skills outside the language classroom.

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### 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:

- Handle successfully a variety of uncomplicated, basic and communicative tasks and social situations in a culturally acceptable manner.
- 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.
- Act with respect and better understanding of Deaf people and ASL, with an appreciation for their linguistic and cultural diversity.

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## Anthropology

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### 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. May be offered online.

### Learning Outcomes

Upon successful completion of this course, the student should 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.

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### **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. May be offered online.

#### **Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Understand the importance of the scientific method and the scope of archaeological research within the broader discipline of anthropology.
- 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.
- 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.
- Identify and analyze various hypotheses concerning the causes related to major cultural shifts over time and across space.
- 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.
- Analyze and discuss reasons for the rise and fall of ancient civilizations. Relate this discussion to issues and trends observed in the contemporary world.
- 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. May be offered online.

#### **Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Demonstrate an understanding of cultural anthropology as a sub-field within the broader discipline of anthropology.
- Explain past and contemporary theoretical approaches employed in cultural anthropology and ethnographic research.
- 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.
- Discuss the concepts of cultural relativism, ethnocentrism, and participant observation.
- Describe anthropology's position on race.
- Illustrate the relationship of language and culture.
- 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.
- Understand the effects of globalization on indigenous peoples around the world.
- Analyze and discuss why indigenous knowledge matters in the contemporary world.

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### **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:

- 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.

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.

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### **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:

- Describe and discuss the main objectives and methodologies of cultural anthropology.
- Describe and discuss the main cultural characteristics of contemporary Mesoamerican Indians – Nahua in particular.
- Describe and discuss the influences of European colonialism on indigenous Mexican peoples.
- Identify and discuss the major factors leading to emergence of Mexican Americans (Chicanos).
- Identify and discuss the main outlines of Chicano cultures and their similarity and difference from traditional Mexican Indian and Anglo-American cultures.

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### **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 should be able to:

- 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.

- 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.
- 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.
- 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.
- 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.
- 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.
- 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

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### **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 should be able to:

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.

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### **ANTH 233 - American Indian Studies**

3 Credit(s)

Third term of a three-term sequence of Anthropology courses dealing with native cultures of North America. This course focuses on the people and cultures indigenous to America west of the Rockies: California, Pacific Northwest, Plateau, and Great Basin areas. Kwakiutl, Nez Perce, Shoshone, and Pomo cultures are emphasized. Course design as described for ANTH231. May be taken out of sequence.

#### **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: Identification of the main cultural domains, forms and their interrelations (subsistence, economics, political and social structure, religion, etc.) as manifested in Native American cultures west of the Rocky Mountains; identification of the role these play in the generation of Native American beliefs and practices.
- Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live: Compare and contrast the cultural patterns and characteristics of the four cultural areas west of the Rocky mountains – Great Basin, California, Plateau, and Pacific Northwest. Compare and contrast cultural patterns and characteristics of modern America with the “traditional” Indian cultures in these four areas.
- Understand the role of individuals and institutions within the context of society: Discussion of differences in cultural concept of “the individual” and “person” and the individual’s relation to the community within and between American Indian cultures and American society. Comparisons and contrast of American and native worldviews.
- Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry: Presents theories of cultural contact and consequences for development, assimilation, and acculturation and assess their adequacy in relation to what is known of the cultural history and characteristics of American Indians.
- 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.
- 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 in all worldviews.
- 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.

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## **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:

- Understand and describe the application and selection procedures for an apprenticeship trade, employer expectations, and workplace responsibilities.
- Employ appropriate and safe workplace behavior, common safety practices, and use of personal protective equipment.
- Effectively use common trade calculations in standard and metric lengths, areas, weights, volumes, etc.
- Recognize, identify and safely use and care for various hand and power tools, employ common safety practices, and use different types of protective gear.
- Understand basic blueprint terms, components, symbols, drawing classifications and dimensions, and interpret drawings.



- Identify and describe basic rigging slings, hitches, hardware, signals, and safety.
- Choose appropriate materials-handling equipment for the task and recognize hazards.
- Demonstrate ability to interpret information both verbally and in writing and communicate effectively in on-the-job situations using both written and verbal skills.
- Demonstrate effective relationship skills with co-workers and supervisors, ability to work on a team, and appropriate leadership skills.

and verbal skills. 9. Demonstrate effective relationship skills with co-workers and supervisors, ability to work on a team, and appropriate leadership skills.

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#### **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:

- Understand and describe the application and selection procedures for an apprenticeship trade, employer expectations, and workplace responsibilities.
- Employ appropriate and safe workplace behavior, common safety practices, and use of personal protective equipment.
- Effectively use common trade calculations in standard and metric lengths, areas, weights, volumes, etc.
- Recognize, identify and safely use and care for various hand and power tools, employ common safety practices, and use different types of protective gear.
- Understand basic blueprint terms, components, symbols, drawing classifications and dimensions, and interpret drawings.
- Identify and describe basic rigging slings, hitches, hardware, signals, and safety.
- Choose appropriate materials-handling equipment for the task and recognize hazards.
- 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.

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#### **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:

- Understand and describe the application and selection procedures for an apprenticeship trade, employer expectations, and workplace responsibilities.
- Employ appropriate and safe workplace behavior, common safety practices, and use of personal protective equipment.
- Effectively use common trade calculations in standard and metric lengths, areas, weights, volumes, etc.
- Recognize, identify and safely use and care for various hand and power tools, employ common safety practices, and use different types of protective gear.
- Understand basic blueprint terms, components, symbols, drawing classifications and dimensions, and interpret drawings.
- Identify and describe basic rigging slings, hitches, hardware, signals, and safety.
- Choose appropriate materials-handling equipment for the task and recognize hazards.
- Demonstrate ability to interpret information both verbally and in writing and communicate effectively in on-the-job situations using both written

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#### **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:

Define electrical trade terms.

- Demonstrate basic safety techniques.
- Identify and use basic tools common to residential wiring.
- Apply basic Ohm's law equations.
- Identify residential service entrance equipment and functions.
- Recognize and use basic wiring diagrams.
- Build and test basic wiring circuits.

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#### **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:

- Identify opportunities in the plumbing trade.
- Demonstrate basic safety techniques.
- Identify conditions requiring permits and work completion to Uniform Plumbing Code.
- Identify components of plumbing systems, drainage, and water.
- Recognize different plumbing fixtures and applications.
- Understand overview of private water wells and sprinkler systems.
- Gain knowledge of the different aspects of maintenance of plumbing systems.
- Perform replacement and repair simple faucets and fixtures.

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#### **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:

- 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).
- Demonstrate the ability to communicate effectively in on-the-job situations using written and verbal skills (00107-04).
- Describe the history of the carpentry trade (27101-06).
- Identify the aptitudes, behaviors, and skills needed to be a successful carpenter (27101-06).
- Use hand tools in a safe and appropriate manner (27103-06).
- Understand the general safety rules for operating all power tools, regardless of type (27103-06).
- Identify various types of building materials and their uses (27102-06).
- Describe the fasteners, anchors, and adhesives used in construction work and explain their uses (27102-06).
- Recognize and identify basic blueprint terms, components, and symbols (00105-04).
- Interpret and use drawing dimensions (00105-04).
- Identify selected electrical, mechanical, and plumbing symbols commonly

used on plans (27104-06).

- Read and interpret plans, elevations, schedules, sections, and details contained in basic Construction drawings (27104-06).

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### **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:

- Add, subtract, multiply, and divide whole numbers, with and without a calculator (00102-04).
- Convert decimals to percentages and percentages to decimals (00102-04).
- Convert fractions to decimals and decimals to fractions (00102-04).
- Recognize some of the basic shapes used in the construction industry, and apply basic geometry to measure them (00102-04).
- Identify the different types of framing systems (27105-06).
- Select the proper joist size from a list of available joists, given specific floor load and span data (27105-06).
- Explain the purposes of subflooring and underlayment (27105-06).
- Estimate the amount of material needed to frame a floor assembly (27105-06).
- 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).
- 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).

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### **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:

- Identify the methods used to calculate the length of a rafter (27107-06).
- Use a rafter framing square, speed square, and calculator in laying out a roof (27107-06).
- Frame a gable roof with vent openings (27107-06).
- Identify various types of fixed, sliding, and swinging windows (27109-06).
- State the requirements for a proper window installation (27109-06).
- Identify the common types of exterior doors and explain how they are constructed (27109-06).
- Identify the parts of a door installation (27109-06).
- Describe the composition of concrete (27108-06).
- Identify types of concrete reinforcement materials and describe their uses (27108-06).
- Identify the parts of various types of forms (27108-06).

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### **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:

- Identify the components of a steel framing system (27205-07).
- Demonstrate the ability to build back-to-back, box, and L-headers (27205-07).
- Identify the different types of drywall and their uses (27206-07).
- Perform single-layer and multi-layer drywall installations using different types of fastening systems, including nails, drywall screws & adhesives (27206-07).
- Explain how soundproofing is achieved in drywall installations (27206-07).

- Explain the differences between the six levels of finish established by industry standards and distinguish a finish level by observation (27207-07).
- Properly finish drywall using hand tools (27207-07).
- Repair damaged drywall (27207-07).
- 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).
- List and identify specific items included on a typical door schedule (27208-07).
- Demonstrate the procedure for placing and hanging a selected door (27208-07).

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### **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:

- Identify the materials and methods used in roofing (27202-07).
- Install fiberglass shingles on gable and hip roofs (27202-07).
- Layout, cut, and install a cricket or saddle (27202-07).
- Explain how to make roof projections watertight when using wood shakes and shingles (27202-07).
- Accurately read a set of commercial drawings (27201-07).
- Explain basic construction details and concepts employed in commercial construction (27201-07).
- Describe the characteristics of various types of insulation material (27203-07).
- Install selected insulation materials (27203-07).
- Understand the requirements for moisture control and ventilations (27203-07).
- Describe various methods of waterproofing (27203-07).
- Describe the purpose of wall insulations and flashing (27204-07).
- Demonstrate lap and panel siding estimating methods (27204-07).
- Describe the types and applications of common wood siding (27204-07).
- Explain fiber-cement siding and its uses (27204-07).
- Describe the types and styles of vinyl and metal siding (27204-07).
- Describe the types and applications of stucco and masonry veneer finishes (27204-07).
- Explain the types and applications of special exterior finish systems (27204-07).

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### **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:

- Establish a level line (27209-07).
- Identify the different types of suspended ceilings (27209-07).
- Interpret plans related to ceiling layout (27209-07).
- Make square and miter cuts using a miter box or power miter saw (27210-07).
- Make coped joint cuts using a coping saw (27210-07).
- Install interior trim, including Door, Window, Base and Ceiling trim (27210-07).
- Layout factory-made cabinets, countertops, and backsplashes (27211-07).
- Explain the installation of an island base (27211-07).
- Calculate the total rise, number and size of risers, and number and size of treads required for a stairway (27110-06).
- Layout and cut stringers, risers, and treads (27110-06).

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**APR 130 - Electrical Principles**

5 Credit(s)

Prerequisite of MTH 060 and 065 or MTH 070 within the past two years, or place at MTH 060 or higher on placement test through the Testing Office. 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.

**Prerequisite:** Math: MTH 060 and MTH 065 or MTH 070 within the past two years, or place at MTH 060 or higher on placement test.

**Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Demonstrate a working knowledge of safety in the workplace, hand tools, electrical math and electrical principles.
- Demonstrate a working knowledge of OSHA regulations.
- Demonstrate a working knowledge of electrical symbols, safety, and circuits.
- Demonstrate a working knowledge of electrical theory.
- Demonstrate the ability to calculate OHM's law formulas.
- Demonstrate a working knowledge of series and parallel circuits and fundamentals.
- Demonstrate a working knowledge of the National Electrical Code.

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**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:

- Demonstrate a base understanding of the OHM's Law.
- Demonstrate a working knowledge of the ability to identify characteristics of series and parallel circuits.
- Demonstrate a knowledge of residential wiring.
- Understand the concepts of Boyle's Law, Charles' Law, and Kirchiow's Law.
- Demonstrate a working knowledge of the National Electrical Code.

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**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:

- Demonstrate the techniques and requirements for basic 1 and 2 family dwelling electrical installations.
- Demonstrate basic residential wiring skills.
- Demonstrate understanding of wiring methods (2-way and 4-way split).
- Demonstrate a working knowledge of receptacles, lighting, and fixtures.
- Demonstrate a working knowledge of the National Electrical Code.

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**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:

- Demonstrate a working knowledge of electrical safety and advanced electrical math.

- 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.
- Demonstrate a base understanding of the AC Circuits.
- Demonstrate a working knowledge of the National Electrical Code.

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**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:

- Demonstrate understanding of single and three phase transformers.
- Demonstrate a working knowledge of DC generators, DC Motors, 3 phase motors and single phase motors.
- Understand the concepts of sizing and protecting motors and troubleshooting motor windings and components.
- Demonstrate a working knowledge of the National Electrical Code.

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**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:

- Identify and install standard electrical motors.
- Demonstrate the ability to correctly wire transformers.
- Demonstrate the ability to wire, test, and troubleshoot motors.
- Demonstrate a working knowledge of basic start-stop techniques.
- Demonstrate a working knowledge of the National Electrical Code.

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**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:

- Identify different materials used in residential and commercial construction.
- Describe common telecommunication pathway routing.
- Identify the names and uses of various types of fasteners and anchors.
- Describe the methods used for the hand bending of conduit.
- Describe the tools, materials and procedures used in low voltage cabling.
- Demonstrate familiarization with the National Electric Code.

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**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:

- Identify different materials used in residential and commercial construction.
- Describe common telecommunication pathway routing.
- Identify the names and uses of various types of fasteners and anchors.
- Describe the methods used for the hand bending of conduit.



- Describe the tools, materials and procedures used in low voltage cabling.
- Demonstrate familiarization with the National Electric Code.

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#### **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:

- Utilize basic electrical theory as it applies to the trade.
- Perform Ohm's Law calculations.
- Explain the various types of equipment to perform tests, calibrations, and system measurements common to the low voltage electrical trades.
- Use standard methods to perform basic circuit analysis.
- Recognize the purpose and need for proper grounding and bonding.
- Define common causes of poor power quality.
- Identify and demonstrate basic knowledge of data telecommunication intercom and paging systems.

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#### **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:

- Utilize basic electrical theory as it applies to the trade.
- Perform Ohm's Law calculations.
- Explain the various types of equipment to perform tests, calibrations, and system measurements common to the low voltage electrical trades.
- Use standard methods to perform basic circuit analysis.
- Recognize the purpose and need for proper grounding and bonding.
- Define common causes of poor power quality.
- Identify and demonstrate basic knowledge of data telecommunication intercom and paging systems.

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#### **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:

- Select switching devices for specific applications.
- Demonstrate proper techniques in low voltage cabling.
- Employ NEC practices common to the Limited Energy trade.
- Identify computer related hardware as it applies to information technology installations.
- Solve troubleshooting problems through the use of specialized test equipment.

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#### **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 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.

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#### **APR 143 - Limited Voltage Cabling**

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:

- Select switching devices for specific applications.
- Demonstrate proper techniques in low voltage cabling.
- Employ NEC practices common to the Limited Energy trade.
- Identify computer related hardware as it applies to information technology installations.
- Solve troubleshooting problems through the use of specialized test equipment.

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#### **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:

- Select switching devices for specific applications.
- Demonstrate proper techniques in low voltage cabling.
- Employ NEC practices common to the Limited Energy trade.
- Identify computer related hardware as it applies to information technology installations.
- Solve troubleshooting problems through the use of specialized test equipment.

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#### **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:

- Summarize common types of radio frequency (RF) systems.
- Perform site surveys for both new and retrofit projects.
- Troubleshoot low voltage equipment problems to the system or component level.
- Institute the people handling skills common to successful supervisors.
- Identify common types of low voltage system repairs.
- Perform various load calculations for equipment housed in racks.
- Discuss principles of project planning and management.
- Describe practices used for assembling electronic system enclosures.

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**APR 1441 - 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:

- Summarize common types of radio frequency (RF) systems.
- Perform site surveys for both new and retrofit projects.
- Troubleshoot low voltage equipment problems to the system or component level.
- Institute the people handling skills common to successful supervisors.
- Identify common types of low voltage system repairs.
- Perform various load calculations for equipment housed in racks.
- Discuss principles of project planning and management.
- Describe practices used for assembling electronic system enclosures.

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**APR 150 - The Millwright and Shop Safety**

5 Credit(s)

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 ORRD 087 And EL115 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. 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:** RD 087 AND EL 115 OR prior college or placement test and Within the past 2 years, completed MTH 020 or higher with a letter 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:

- Demonstrate ability to interpret both verbal and written information and communicate effectively in on-the-job situations using both written and verbal skills.
- Demonstrate effective relationship skills with co-workers and supervisors, ability to work on a team, and perform appropriate leadership skills.
- 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.
- Understand and perform OSHA approved standards.
- Employ common safety practices; use different types of personal protective gear, and explain the appropriate safety precautions to take around common job-site hazards.
- Understand Lockout-tagout procedures.
- Explain the importance of the Hazard Communication Standard (HazCom) and Materials Data Sheets (MSDS's).
- Recognize and identify some of the basic tools used in the millwright industry and follow the safety procedures for lifting heavy objects.
- Identify power tools commonly used in the millwright industry and safely use various hand and power tools.
- Identify and describe the use of slings and common rigging hardware.
- 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.

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**APR 151 - Millwright Machine Theory and Trade Calculations**

5 Credit(s)

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 EL115 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. 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:** 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:

- Perform industrial calculations as related to millwright measurements and layout.
- Use fundamental layout.
- Understand metal machining vocabulary.
- Perform very basic lathe set-up.
- Demonstrate knowledge of precision measuring tools and how to read them.

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**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:

- Understand how to use lockout-tagout procedures.
- Understand basic mechanical power train functions.
- Gain knowledge in what makes a mill operational.
- Describe the basic steam functions and necessary precautions and differences during repairs.
- Understand what can be serviced by a millwright vs. a steam specialist.

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**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:

- Demonstrate a working knowledge of the plumbing trade and employer expectations, and workplace responsibilities.
- Demonstrate appropriate and safe workplace behavior, employ common safety practices, and use different types of personal protective equipment.
- Identify and safely use and care for various plumbing hand and power tools, employ common safety practices, and use different types of protective gear.
- Perform trade specific calculations with whole numbers, fractions, decimals, percentages, and ratios.
- Calculate 45-degree offsets calculations.
- Interpret drawings and measure pipe using fitting tables and framing squares.
- 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.

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**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:

- Demonstrate knowledge of different types of pipe and fittings such as plastic, copper, cast-iron, and carbon steel.
- Demonstrate how to measure, cut, join, and support various pipes and fittings according to manufacturer's instructions and applicable codes.
- Select plumbing fixtures, water heaters, and hot water systems based on desired results and related code.
- 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.
- Demonstrate competence in using basic math concepts in on-the-job plumbing situations.
- Identify tables located in the Uniform Plumbing Code (UPC).
- Apply the principles of science to applications in plumbing.
- Demonstrate a basic understanding of the codes, definitions and responsibilities, as defined by the UPC.

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#### 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:

- Explain DWV systems and how to remove waste safely and effectively.
- Identify DWV piping materials.
- Explain the characteristics of water.
- Select proper water pipe sizing based on specification.
- Select plumbing fixtures, water heaters, and hot water systems based on desired results and related code and explain how hot water heaters function.
- Identify how system components work and apply drain and vent sizing, grade, and waste treatment.
- Explain the major components of water distribution systems, their functions, and water sources and treatment methods.
- Explain the characteristics and importance of backflow prevention. 9. Identify and apply articles in Uniform Plumbing Code.

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#### 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:

- Calculate 22-1/2-, 45-, 60-degree offsets, parallel offsets and determine square of a corner.
- Draw simple and rolling offsets, as well as offsets on parallel runs of pipe.
- Read and interpret building plans and drawings.
- Create an isometric drawing and prepare elementary single-line sketches of drainage and vent systems.
- Layout a building site including fixtures through building sewers including building the stack location.
- Prepare a materials list for a drainage waste and vent system using approved submittal data.
- Explain applications for installation of hangers, supports, and fire stopping for plumbing systems.
- Install and test a DWV system using appropriate hangers and correct grade or slope.
- Use proper techniques and equipment for locating, installing and connecting roof, floor and area drains according to code.

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#### 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:

- Identify various fixtures, valves, and faucets and their typical application.
- Prepare elementary single-line sketches of drainage and vent systems.
- Prepare drawings for both drainage and water piping systems using detailed symbols.
- Develop a material takeoff from a given set of plans.
- Use plans and fixture rough-in sheets to determine the location of fixtures and the route of the water supply piping.
- Prepare take offs from plans, locate fixture route pipe, and locate and size water meters for installation of a water system.
- Explain requirements and techniques necessary to modify structural members in plumbing installation.
- Explain sizing and installation of a water service line, including back flow prevention, and proper testing of a water supply system.
- Describe procedures required in safely installing and repairing bathtubs, shower stalls, valves, faucets, water closets, sinks, lavatories and urinals.
- Identify circuit, voltage and Ohm's when using electrical testing equipment on electrical components used in plumbing equipment.

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#### 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:

- Identify and explain the functions of the basic components of water heaters.
- Install both an electric and gas water heater and describe the safety hazards associated with both.
- 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.
- Demonstrate familiarity with applicable fuel gas codes.
- Identify the proper procedures for repairing and maintaining fixtures, valves, and faucets.
- Relate the provisions of the UPC to all types of plumbing installations.

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#### 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:

- Demonstrate knowledge of the opportunities in the sheet metal trade.
- Understand basic safety and terminology in the sheet metal trade.
- Identify the tools and machinery used in the sheet metal trade.
- Identify different types of sheet metal, material, and fasteners common to the sheet metal trade.
- Demonstrate how to use patterns, draw for pattern drafting, and cut sheet metal.
- Demonstrate how to punch, drill and rivet sheet metal; fold edges and make seams.
- Understand turning, burring, and raising sheet metal as well as forming, crimping, beading, and grooving sheet metal.
- Understand parallel line development and radial line development.
- Identify how sheet metal is used in the building trade.



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**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:

- Identify shop equipment and understand basic safety in the sheet metal shop.
- Begin to read, interpret, and visualize sheet metal working drawings and blueprints.
- Differentiate between the three different types of layout and employ these techniques in making duct fittings.
- Recall proper allowances needed to complete fabrication and repeat the proper order in which fittings are laid out.
- Deduce and illustrate proper cut sheets and working view of fittings.
- Label the ductwork properly.
- Modify existing duct work to fit a given situation.

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**APR 172 - Sheet Metal/HVAC/R Blueprint Reading**

3 Credit(s)

Designed for Oregon state-recognized apprentices employed in the HVAC/R or sheet metal trades. The course content includes introduction to specifications, submittals, blueprint reading, drafting blueprints, scaling existing buildings and drafting architectural components and mechanical systems.

**Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Read and understand plans, specifications and submittals.
- Understand the relationship and importance of plans, specifications, and submittals.
- Identify and label symbols on construction blueprints.
- Develop mechanical blueprints for HVAC systems.
- Identify architectural sheet metal items and translate them into material orders.
- Translate existing mechanical blueprints into material orders.

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**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, student s will be able to:

- Calculate elementary algebraic equations and formulas.
- Apply appropriate formulas to mathematical situations.
- Be familiar with basic geometric shapes.
- Solve equations involving addition, subtraction, multiplication, and division.
- 5 .Solve problems involving ratios and proportions.
- Determine the perimeter of geometric shapes and circumference of a circle.
- Determine the area and volume of geometric shapes.
- Use trigonometric sine, cosine, and tangent functions to find right triangle sides and angles.

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**APR 185 - Shielded Metal Arc Welding 1**

1-4 Credit(s)

Prerequisite: Minimum reading score of 68 (Accuplacer) or 241 (Next Gen Accuplacer) OR minimum writing score of 64 (Accuplacer) or 226 (Next Gen Accuplacer) RD 080 OR OR RD 087 And EL115 OR Prior College. 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:

- Perform welding in a manner that demonstrates concern for safety and welfare for self, others and property.
- Cut steel to project dimensions using manual oxyacetylene cutting torch.

- Metallic arc weld in the four standard positions: (flat, horizontal, overhead, and vertical) on all assigned projects.

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**APR 186 - Wire Drive Welding 1**

1-4 Credit(s)

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 EL115 OR Prior College. 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:

- Set GMAW machine controls to effect short arc, spray arc and pulsed arc metal transfer while using solid wire of various sizes.
- Select and properly connect to a GMAW power source appropriate shielding gases necessary to short arc and spray arc metal transfer.
- 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.
- Identify the type, cause, and solution to weld defects typically associated with GMAW short arc, spray arc and pulsed arc metal transfer.
- Perform minor maintenance on GMAW equipment associated with contact tip, liner and drive rolls.

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**APR 187 - Fundamentals of Metallurgy**

1-3 Credit(s)

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 087 And EL115 OR Prior College. 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:

- Identify various types of the more common commercial metals by two or more methods.
- Describe the basic atomic and crystalline structure of metals.
- Describe at least five mechanical, physical, and chemical properties of metals.
- Describe the effects of alloying elements.
- Perform the heat-treating processes of annealing, normalizing, quench hardening, tempering, stress relieving and other metal working processes.
- Explain the effects of expansion and contraction during temperature changes in structural shapes, fabricated frames and machinery.
- Determine the weld ability of various metals and describe an appropriate welding procedure and process for those metals.
- Demonstrate or describe processes and applicability of preheating and post heating for various metals.
- Describe fluxes, slags, and shielding gases and their effects on weldments.

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**APR 189 - Shop Practices**

2 Credit(s)

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 EL115 OR Prior College. 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:

- Understand the principles of shop safety.
- Be skilled in basic soldering/de-soldering techniques.
- Have knowledge of electrical diagrams and schematics.
- Have knowledge of the techniques required for proper wire termination.
- Have a basic proficiency in the use of common electronics lab equipment and hand tools.

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### 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. May be offered through Distance Learning.

**Prerequisite:** RD 087 AND EL 115 OR prior college AND MTH 060 OR higher with a letter grade of C- or better, OR placement test.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Read resistor color codes.
- Measure voltage, current, and resistance.
- Knowledge of DC series-parallel circuit characteristics.
- Understand basic AC circuits and use of the oscilloscope.

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### APR 191 - Electrical Theory 2

1-4 Credit(s)

Prerequisite: ET 129, EET 129, or APR 190. 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. May be offered Distance Learning.

**Prerequisite:** ET 129 OR APR 190

#### Learning Outcomes

Upon completion of this course, the successful student will be able to:

- Effectively use mathematical skills to perform calculations common to the electrical trades.
- 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.
- Define the units of capacitance and inductance and explain how these devices charge and discharge in RC and RL circuits.
- Calculate the total value of capacitors that are connected in series and/or parallel.
- Identify high pass, low pass, band pass and notch filters.
- Identify dot polarities to determine the phase difference between the primary and secondary sides of a transformer.
- Recognize the basic types of common transformers and perform power, voltage and current calculations on both the primary and secondary sides of the transformer.
- Perform AC reactance calculations for capacitors and inductors.
- Demonstrate a working knowledge of trigonometry in the study of AC reactive components and their phase angles.
- Analyze RC, RL and RLC circuits for individual currents, voltage and power drops and perform accurate impedance calculations for these circuits.
- Contrast the differences between parallel and series RLC circuits in AC applications.
- Based on component values, calculate a circuit's resonant frequency, half power points, Q and bandwidth.
- Explain the characteristics of a resonant circuit as it relates to power factors and the transfer of information.
- Demonstrate a working knowledge of the oscilloscope as a tool to analyze voltage, frequency and phase differences in complex AC circuits.
- Communicate effectively with others in a technical manner using specific nomenclature in the proper context.

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### 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:

- Select, inspect, use, and maintain special rigging equipment including block and tackle, chain hoists, come-alongs, jacks, and tuggers (27301-07).
- Tie knots used in rigging (27301-07).
- Interpret a load chart (27302-07).
- Use and interpret hand signals (27302-07).
- Identify requirements for an engineered lift (27302-07).
- Identify special types of concrete and describe their uses (27303-07).
- Calculate concrete volume requirements for rectangular, cylindrical, or other geometric structures using formulas, concrete tables, and/or concrete calculators, as applicable (27303-07).
- Identify concrete testing methods (27303-07).
- Identify ways to increase soil density (27306-07).
- Explain the purpose of soil density (compactions) (27306-07).
- Explain the safety considerations for trenches and deep excavations (27306-07).

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### 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:

- Recognize and identify the bar bends standardized by the American Concrete Institution (ACI) (27304-07).
- Safely use selected tools and equipment to cut, bend, and install reinforcing materials (27304-07).
- Describe the factors that contribute to the quality of concrete placement (27305-07).
- Name the factors that affect the curing of concrete and describe the methods used to achieve proper curing (27305-07).
- Identify various types of footing and foundations (27307-07).
- Install templates, keyways, and embedment's (27307-07).
- Identify the different classes of slabs-on-grade (27307-07).
- Identify edge forms and explain their purpose (27307-07).
- Establish finish grade and fill requirements (27307-07).

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### 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:

- Explain safety procedures associated with using concrete wall forms (27308-07).
- Recognize various types of manufactured forms (27308-07).
- Locate and install bulkheads and embedded forms (27308-07).
- Identify the safety hazards associated with elevated deck formwork and explain how to eliminate them (27309-07).
- Identify the different types of elevated decks, flying and handset form systems (27309-07).
- Identify typical bridge and culvert form systems (27309-07).
- Explain the importance of the casting bed (27310-07).
- Identify the special rigging requirements for tilt-up wall panels (27310-07).
- Identify the different methods of forming tilt-up wall panels (27310-07).

- Describe the final grouting procedure (27310-07).

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### **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:

- Use manual or electronic equipment and procedures to make distant measurements and perform site layout tasks (27401-08).
- Use a builder's level and differential leveling procedures to determine site and building elevations (27401-08).
- Record site layout data and information in field notes using accepted practices (27401-08).
- Check and /or establish 90-degree angles using the 3-4-5 rule (27401-08).
- Explain the different types of roof systems (27403-08).
- Identify various advanced roof systems and explain the techniques used in their construction (27403-08).
- Explain the different types of wall systems (27404-08).
- Identify various advanced wall systems and explain the techniques used in their construction (27404-08).

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### **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:

- Explain the meaning of the terms backfire and flashback, describe how to avoid them, and what to do if they occur (27407-08).
- 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).
- Describe the characteristics of a good weld (27407-08).
- Identify materials and methods used to finish the interior of commercial buildings (27408-08).
- Identify materials and methods used to finish the exterior of commercial buildings (27408-08).
- Identify items that need to be addressed in the site utilization plan (27409-08).
- List items that need to be addressed in the site utilization plan (27409-08).
- Identify methods used to mitigate water problems at a work site (27409-08).
- Understand and incorporate leadership skills into work habits including: communication, motivation, team building, problem solving, and decision-making skills (27410-08).
- Demonstrate an awareness of safety issues, including the cost of accidents and safety regulations (27410-08).
- Understand the planning process, scheduling, and cost and resource control (27410-08).

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### **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:

- 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).
- Explain the safety precautions associated with light equipment (27406-08).
- Perform calculations pertaining to angular measurements for commercial construction applications (27402-08).
- Use trigonometric leveling techniques to determine unknown elevations for construction site applications (27402-08).
- Explain and demonstrate the procedure for cutting and installing various stair parts (27405-08).
- 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).
- Identify what materials can be used to build stairs for commercial construction (27405-08).

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### **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.

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### **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:

- Perform heat loss and gain calculations.
  - Properly design mechanical duct systems.
  - Select proper tools and equipment for HVAC/R installations.
  - Demonstrate proper brazing and soldering techniques.
5. Use techniques and materials required for the proper fusion of plastic pipes.

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### **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:

- Identify safety rules and precautions for troubleshooting problem associated with pumps, compressors and their systems.
- Explain how vacuum, oil and gas pumps operate and perform the various types of tests common to those pumps.
- 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.
- Explain how air compressors work and how they are tested.



- Identify, troubleshoot, and install various types of pumps, controls, valves, and piping.

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#### **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:

- Demonstrate knowledge of basic water system application including analysis and treatment as it pertains to HVAC systems.
- Demonstrate knowledge of basic indoor air quality and how to comply with established Indoor Air Quality (IAQ) standards.
- Demonstrate knowledge of residential and commercial energy conservation scenarios, and the relationship of commercial energy conservation and building management systems.
- Demonstrate knowledge of basic heating and cooling system design and air balancing.
- Identify and troubleshoot basic commercial refrigeration systems and alternative and specialized heating and cooling systems.
- Describe basic fundamentals of crew leadership.

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#### **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 should be able to:

- Perform various code calculations.
- Reference and cite articles in the NEC.
- Interpret NEC articles as they apply to the construction trades.
- Understand legal and safety aspects of electrical installations.
- Identify the uses of various types of equipment as referenced in the NEC.
- Understand the principles and practices used by the various electrical trades.
- Identify and use reference material useful in helping with code interpretation.
- Be aware of test strategies designed to increase the “odds” of attaining a better test score.
- Be prepared to take the code test required by each student's discipline in order to attain an Oregon Journey Card.

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#### **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:

- Understand and wire controls for motors, starters, VFD's, and the associated push-buttons and control devices.
- Understand and demonstrate the safety practices for equipment safety and lockout techniques.
- Demonstrate a working knowledge of the National Electrical Code.

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#### **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**

Upon successful completion of this course, the student should be able to:

- Understand how to interpret electrical prints and specifications.
- Understand basic blueprint reading concepts.
- Demonstrate a working knowledge of Construction Specifications and documentation.
- Demonstrate a base knowledge of electrical safety.
- Perform load calculations for residential and multi-family, commercial and industrial electrical projects.
- Perform ground and phase fault calculations as well as power calculations for various types of electrical loads.
- Understand the NEC 2004 code requirements for grounding and bonding.
- Effectively use common electrical calculations to solve for wiring requirements.
- 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.
- Demonstrate a base understanding of the Grounding and Bonding Principles.
- Demonstrate a working knowledge of the National Electrical Code.

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#### **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**

Upon successful completion of this course, the student should be able to:

- Understand how to interpret electrical prints and specifications.
- Understand basic blueprint reading concepts.
- Demonstrate a working knowledge of Construction Specifications and documentation.
- Demonstrate a base knowledge of electrical safety.
- Perform load calculations for residential and multi-family, commercial and industrial electrical projects.
- Perform ground and phase fault calculations as well as power calculations for various types of electrical loads.
- Understand the NEC 2004 code requirements for grounding and bonding.
- Effectively use common electrical calculations to solve for wiring requirements.
- 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.
- Demonstrate a base understanding of the Grounding and Bonding Principles.
- Demonstrate a working knowledge of the National Electrical Code.

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#### **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:

- Calculate the power required for an alarm system.
- Explain alarm installation guidelines and safety procedures.
- Identify components used in fire alarm and security systems.
- Identify various techniques used in “protective signaling” system installations.
- Reference various NEC articles as they apply to emergency call systems.

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#### **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:

- Calculate the power required for an alarm system.
- Explain alarm installation guidelines and safety procedures.
- Identify components used in fire alarm and security systems.
- Identify various techniques used in “protective signaling” system installations.
- Reference various NEC articles as they apply to emergency call systems.

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#### **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:

- Calculate the power required for an audio system.
- Describe methods and equipment used in nurse call system installations.
- Identify acceptable signal levels for broadband systems.
- Explain the use of common CCTV equipment.
- Identify various types of components used in camera systems.
- Reference various NEC articles as they apply to broadband systems.

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#### **APR 241 - 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:

- Calculate the power required for an audio system.
- Describe methods and equipment used in nurse call system installations.
- Identify acceptable signal levels for broadband systems.
- Explain the use of common CCTV equipment.
- Identify various types of components used in camera systems.
- Reference various NEC articles as they apply to broadband systems.

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#### **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:

- Describe the connection of two or more stand-alone systems together.
- Identify the use of media types for analog and digital platforms.
- Identify the various types of components used in access control systems.
- Reference various NEC articles as they apply to system installations.

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#### **APR 242 - 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:

- Describe the connection of two or more stand-alone systems together.
- Identify the use of media types for analog and digital platforms.
- Identify the various types of components used in access control systems.
- Reference various NEC articles as they apply to system installations.

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#### **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:

- Explain distribution equipment including grounding, switchboard and ground fault maintenance and transformers.
- Identify electrical drawing symbols.
- Discuss transformer types, construction, connections, protection, and grounding.
- Understand how capacitors and rectifiers are used in transformer application.
- Describe the types of conductors used in wiring systems.
- Explain the relationship between insulation, current-carrying capacity, and temperature ratings.

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#### **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-off's and bid proposals by using various sets of industrial prints to provide cost estimations.

**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:

- Understand the measurements, components, and key elements of an industrial blueprint.
- Identify symbols unique to various types of blueprints and schematics.
- Develop and estimate material requirements and an accurate material list for a given job.
- Ability to sketch a schematic.
- Understand legality of prints.
- Perform basic job cost analysis and estimating.
- Understand the use of industrial blueprints in estimating job cost and take-off's.
- Understand industrial automation techniques.
- Perform calculations based on blueprint scales and elevations.

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#### **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:** 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:

- Demonstrate knowledge of lockout-tagout procedures.
- Demonstrate knowledge with pneumatic components; how they work; and

their use in a system.

- Sketch out a system and troubleshoot other systems.
- Gain knowledge of the fundamentals and limitations of pneumatic systems and how to work on them safely.
- Identify a comprehensive view of bearings; gain knowledge in the ability to understand why they failed; and examine how to prevent future failures.
- Understand the different forms of alignment along with the many part numbers and codes.
- Examine the special needs of lubes and lubrication systems and conveyor systems.

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#### **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:** 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:

- Use Lockout-tagout procedures.
- Read and understand hydraulic schematics.
- Describe basic functions.
- Identify components.
- Troubleshoot basic system functions.
- Perform minor repairs and P.M.

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#### **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:** 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:

- Sketch and read piping schematics.
- Recognize piping systems and tools and how to fit them together.
- Determine what type of piping system and piping tooling is required.
- Describe different methods of connecting piping systems.
- Identify the standards for coloring and labeling.
- Describe and identify ancillary components and how they differ.
- Develop a good piping system using the methods of clamping, hanging, and supporting them.
- Identify soft and/or flexible connections.
- Gain a working knowledge of tube bending, pipe bending and flaring equipment.

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#### **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:

- Discuss the methods used to eliminate or reduce electrical shock hazards.
- Demonstrate knowledge of piping and tubing layout procedures.
- Explain the steps in creating a hand-sketched isometric drawing.
- Understand methods and procedures used to measure, cut, bend, and support piping and tubing.

- Perform bends in conduit up to six inches.
- Demonstrate knowledge of mechanical, hydraulic, and electrical benders.

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#### **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:

- Discuss the principals of hydraulic devices and controls.
- Safely troubleshoot a hydraulic system.
- Understand the principles of atmospheric and compressed air gases.
- Address the functions and control of pneumatic system components and provide guidelines for troubleshooting.
- Troubleshoot motor-driven valves.
- Explain the operation of servo-mechanical actuators

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#### **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 should be able to:

- Demonstrate safe workplace behavior and employ common safety practices.
- Effectively use common trade calculations in standard and metric lengths, areas, weights, volumes, basic offsets, etc..
- Identify and safely use and care for various plumbing hand and power tools.
- Demonstrate troubleshooting skills for a variety of equipment, including electric water heaters, gas water heaters, etc. mechanical fittings, installation standards.
- Use the concepts of temperature and pressure to assess effects on plumbing installations.
- Lay out a water supply system efficiently by calculating delivery lengths and pressure drops.
- Identify common water problems and the basic techniques and equipment to solve problems.
- Demonstrate knowledge of the Uniform Plumbing Code.

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#### **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:

- Explain the principle of backflow due to back siphon age or back pressure, the hazards of backflow and the importance of backflow preventers.
- Identify and explain the applications of the six basic backflow prevention devices.
- Explain installation of common types of backflow devices.
- Calculate drainage fixture units for waste system, building drain size, sewers and vent systems.
- Calculate sizing for sewer pumps.
- Identify and explain sizing requirements of special kinds of waste and vent systems.
- Explain how a vent system works and the applications of each type of vent



required for different drains waste and vent systems.

- Design vent systems according to local code requirements, and sketch the different types of vents.
- Identify corrosive waste and explain where they are found.
- Perform hands-on lab work plumbing with waste, water, gas, vents.

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#### **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:

- Use a detailed drawing to identify system components, code requirements and installation requirements of gas piping.
- Perform math equations to calculate rain water disposal and storm drainage.
- Understand new green housing.
- Harvest rain water and sizing.
- Harvest gray water and sizing.

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#### **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:

- Demonstrate complete knowledge of all aspects of the Uniform Plumbing Code and Oregon Amendments.
- Demonstrate knowledge of plumbing theory.
- Demonstrate skills in sizing, servicing, and installation of plumbing systems.

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#### **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:

- Explain the installation, utilization, and maintenance requirements for standby and emergency electrical systems.
- Discuss sensing and transmitting devices used in an instrumentation loop.
- Effectively use technical manuals, and specification sheets.
- Understand how the three and five-point methods are used in instrumentation calibration.
- Draw basic control loop diagrams that include a measuring element, a transducer, and a transmitter.
- Identify components that require calibration in pneumatic, analog, and smart loops, and describe methods used to calibrate these components.

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#### **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:
- Discuss the construction, operation, and uses of pneumatic control valves, actuators, and positioners.
- Explain the installation and maintenance of various control devices.
- Verify mechanical installation and verification of a loop.

- Validate that a loop has correct tag numbers.
- Troubleshoot and locate problems in a control loop.
- Discuss PID controls and their application in industrial process control.

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#### **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:

- Address open, closed, and visual loop tuning.
- Explain how data network devices and computers are interconnected for communication purposes.
- Describe how open connectivity is used in industrial data networks.
- Discuss the application of PLCs in industrial process control.
- Identify components of PLCs, including power supplies, I/O modules and processor modules.
- Describe how DCS was developed by combining the technologies of single loop control, direct digital control, and supervisory control.

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#### **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:

- Interpret blueprint drawings and designs related to architectural sheet metal applications.
- Identify the processes needed to fabricate and install architectural sheet metal products.
- Understand various methods to create a water tight environment as related to architectural sheet metal applications.

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#### **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:

- Understand the mechanical codes as they apply to their work processes.
- 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.
- Interpret installation manuals for safe and efficient equipment installations.

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#### **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:

- Interpret different styles of duct design.
- Differentiate between several kinds of duct systems, while evaluating a given structure to derive the best application.
- Compose examples of different duct systems.

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**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:

- Use practical layout skills to include faster techniques and shop processes.
- Work directly with customer/owner on creative custom designs.
- Understand the uses and availability of more modern, computer driven tools for layout and design.
- Demonstrate the importance of proper measuring and foresight on the physical job site.
- Perform more effectively by using organizational and efficiency skills both in the shop and field.
- Demonstrate the advantages of using different seaming/welding processes to achieve certain outcomes or effects.
- Use proper installation techniques and applications for projects which are more visible.
- Demonstrate effective communication skills in dealing with owners and contractors in areas of design, scheduling, coordination, and consulting.
- Understand the procedures of bidding work in this field.

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**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:

- Discuss the key components used in effective project planning.
- Efficiently arrange a shop to enhance productivity.
- Use parallel and radial line techniques to fabricate sheet metal components.
- Safely use tools and equipment common to the sheet metal industry.
- Design and use patterns in the sheet metal fabrication process.

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**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:

- Apply human relations skills to the project management role.
- Identify the project manager's duties and responsibilities with respect to safety and loss prevention.
- Explain the scope and purpose of the project supervision program.
- Identify the root causes of performance problems and how to handle conflicts.
- Identify and explain the eight negotiating techniques and how to respond to them.
- Define commodities, engineered equipment, construction equipment, and construction supplies.
- List the types of documents used on a project.
- Create a step-by-step list of tasks that will complete a project.
- Describe the purposes and benefits of using formal project schedules and why it is important to maintain schedules.
- Describe the essential components of an effective quality control and assurance program or process.

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**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:

- Have knowledge of mechanical principles, linear motion, simple machines and levers.
- Understand the nature of work, energy, torque, and power and how it is generated.
- Differentiate among transformer types by construction and use.
- Have knowledge of AC motor types, characteristics and nameplate parameters.
- 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.

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**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:** ET 229 or APR 285.

**Learning Outcomes**

Upon completion of this course, the successful student will be able to:

- Be knowledgeable of electrical safety and dangers of electrical power.
- Understand electrical symbols, abbreviations, and diagrams used in residential, commercial and industrial controls.
- Be knowledgeable of standard control devices.
- Understand the principles of control logic.
- Be knowledgeable of troubleshooting techniques required for the maintenance of electromechanical devices and controls.
- Have basic proficiency in the use of common tools and test equipment.

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**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:

- Build upon Electrical Theory principles and concepts power.
- Understand a "Basic Control Systems" and its components
- Comprehend and utilize serial communications with a programmable logic controller. Compile and troubleshoot ladder logic.
- Use software programming and monitoring tools for Allen Bradley SLC PLC'S
- Become familiar with controllers, program/ladder files, and routines and sub routines.
- Know basic and complex ladder logic instructions.
- Build a simple control system.

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**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:** ET 234 or APR 290.

**Learning Outcomes**

Upon completion of this course, the successful student will be able to:

- Build upon Process Control 1 course material.
- Understand an "Automated Process Control System" and its components.
- Comprehend and utilize Ethernet communications in a manufacturing process.
- Understand Ethernet communications in a SCADA environment.
- Compile and troubleshoot ladder logic.

- Use software programming and monitoring tools for Allen Bradley ControlLogix PLC's.
- Become familiar with controllers, program/ladder files, and routines and sub routines.
- Know basic and complex ladder logic instructions.
- Build a simple automated process using a motor and PLC.

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### 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:** ET 235 or APR 291 and second year standing.

#### Learning Outcomes

Upon completion of this course, the successful student will be able to:

- Understand the basic statistical terms and spreadsheet analysis of a manufactured control.
- Comprehend physical transducers and signal conditioning.
- Be able to discuss analog to digital data conversion topics.
- Demonstrate knowledge of DC and stepper and motors.

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## 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:

- Identify and demonstrate an understanding of the technical procedures and creator's role in art throughout the history of cultural production.
- Demonstrate and effectively communicate an understanding of the impact of religious, philosophical, and political beliefs on cultural production and communities.
- Interpret and apply their understanding of the use and meaning of symbols and iconography throughout history to current issues, culture or history.
- Compose written or visual material to effectively communicate knowledge and demonstrate comprehension of art historical periods, styles, terminology, iconography, theory and artworks.

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### ART 115 - Basic Design: Fundamentals

3 Credit(s)

Fundamental course in 2D Design. Emphasis on visual elements and principles in two dimensional design media and processes. Student will participate in critiques, discussions and presentations of the historical and contemporary context of design. Student will create and analyze projects that demonstrate critical and creative thinking and knowledge of 2D design theory and practice. Strongly recommended for first year art majors, taken prior to ART 116 and concurrently with ART 111 or ART 131.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Create and analyze 2D design projects that demonstrate knowledge of two-dimensional theory and practice and reveal personal aesthetic and/or conceptual decision-making.
- Demonstrate use of, and analyze personal aesthetic choices in the creation of 2D projects and relate design projects to the greater context of specific art historical and/or contemporary art issues.
- Identify and demonstrate use of 2D design elements, including lines, shape, form value, pattern, positive and negative space, and 2D organizational elements, including unify, balance, movement, rhythm, focal point, etc. (General vocabulary list for instructor use is filed in the AAD office.)
- Demonstrate the ability to discuss 2D design images, projects and art historical images in a constructive and analytical fashion in relation to specific 2D objectives and media forms.
- Demonstrate aesthetic and conceptual understanding of assigned 2D design content, objectives, materials, and technical concepts.

- Develop and demonstrate the ability to work with preconceived thematic ideas in an organized visual fashion.
- Demonstrate individual visual aesthetic and/or conceptual choices in 2D design projects to develop personal expression.
- Demonstrate and understand 2D design issues in relationship to other 2D/3D disciplines, including painting, printmaking and other media.

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### ART 116 - Basic Design: Color

3 Credit(s)

Fundamental course in color theory. Emphasis on color theory and 2D design concepts in multiple media and processes. Student will participate in critiques, discussions and presentations of the historical and contemporary context of the use of color. Student will create and analyze projects that demonstrate critical and creative thinking and knowledge of color theory and practice.

**Prerequisite:** Recommend students first take ART 115.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Develop and demonstrate knowledge of design and color theory and practices and reveal personal aesthetic and/or conceptual decision-making. Create and analyze design projects that demonstrate knowledge of 2D and/or 3D design and color theory and practice.
- Demonstrate use of, and analyze personal aesthetic choices in the creation of 2D/3D color projects, and relate course projects to the greater context of specific art historical and/or contemporary art issues.
- Identify and demonstrate use of design elements and organizational principles. Identify and demonstrate use of color theory such as hue, value, intensity, temperature, etc., and specific color systems and relationships.
- Demonstrate the ability to discuss art historical projects in color by demonstrating color and design theory. Demonstrate the ability to discuss color design projects in a constructive and analytical fashion by relating to specific design and color-based objectives and media forms.
- Understand the content, objectives, aesthetics, materials, and technical issues of each course project.
- Develop and demonstrate the ability to work with preconceived thematic ideas in an organized visual fashion.
- Demonstrate individual visual aesthetics and/or conceptual choice in design/color-based projects to develop personal expression.
- Demonstrate and understanding 2D/3D design and color issues in relationship to other disciplines such as advertising design, photography, film graphic design and other fine art media.

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### 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, the student should be able to:

- Increase the student's awareness of and capability to work with various visual elements involved in three-dimensional design. Accomplished through introductory lectures and studio problems using simple, 3D materials.

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### 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. Recommended for Art and Applied Design majors as well as non-majors. May be repeated up to 9 total credits.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Have learned and assembled a variety of basic and creative book binding styles and pop-up techniques.
- Have designed and created original artist books using existing written content or have written their own content according to the assignments.
- Have focused on design process development, conceptual development and typographic layout.



- Have learned the history of; the book form throughout the world, movable books, artist's books and fine press books.
- Have a charged imagination to create personally and artistically relevant books.
- 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.
- Have researched artist books, pop-up books and the history of the book at the library and online.

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### ART 119 - Typography 1

3 Credit(s)

Explores the use and design of letterforms and typographic design. Basic typographic history and classification of typefaces is covered, while essential craftsmanship and technical skills are stressed. Coursework includes necessary competencies for the Graphic Design program.

**Prerequisite:** ART 115 or ART 131.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Have gained basic skill in hand lettering techniques and the basic elements of layout (composition for printed matter), plus competence with the tools and writing instruments used.

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### 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.

**Prerequisite:** ART 118

#### Learning Outcomes

Upon successful completion of this course, the student will:

- Demonstrate a variety of basic and creative book binding styles and pop-up techniques building on skills learned from the basic level class.
- Design and create original artists books using existing written content or have written their own content according to the assignments.
- Demonstrate design process development, conceptual development and typographic layout.
- Describe the history of the book form throughout the world, the history of movable books, artist's books and fine press books.
- Create personally and artistically relevant books.
- 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
- Have researched artists books, pop-up and the history of the book at Lane's library and online.

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### ART 131 - Introduction to Drawing

3 Credit(s)

Fundamental course in drawing media. Emphasis on basic concepts of drawing and developing skills in perception, representation, composition and use of traditional drawing materials. Student will engage with critiques, discussions and the historical and contemporary context of drawing as an art form. Student will create and analyze projects that demonstrate critical and creative thinking the knowledge of drawing theory and practice. This course or equivalent ability level is a prerequisite for many 200-level studio courses. May be repeated up to 9 total credits.

**Corequisite:** Recommend Art majors take concurrently with ART 115.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Demonstrate the understanding of drawing as process, as the result of physical activity, critical thinking and intuition. Explore expressive possibilities by using drawing theory and physical practice.
- Demonstrate use of, and analyze personal aesthetic choices in the creation of drawing projects, and relate personal projects to the greater context of specific art historical references and/or contemporary art issues.
- Demonstrate use of various drawing media, and understanding of aesthetic and compositional elements in drawing. Demonstrate use of perceptual and conceptual drawing skills. (Ex. Working with specific thematic ideas).
- Demonstrate the ability to discuss art historical drawings, personal work and peer work in a constructive and analytical fashion related to specific drawing objectives.

- Demonstrate aesthetic and conceptual understanding content, objectives, materials and technical concepts of each drawing project.
- Demonstrate the use of art historical and/or contemporary issues within the drawing medium, including aesthetics, materials technical concepts and content.
- Demonstrate individual visual aesthetic and/or conceptual choices within the drawing process.
- Demonstrate and understand drawing issues in relationship to other disciplines, including painting, printmaking, graphic design, media arts and etc.

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### ART 216 - Digital Design Tools

3 Credit(s)

An introduction to core layout, vector, bitmap, and document-sharing software used in graphic design. Coursework includes necessary competencies for the graphic design program. Graphic Design and/or Multimedia and Design Students must take this course as a graded option and earn a B- or better for the course to count in the core sequence of courses

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- 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.
- Use Google Suites as the document sharing software.
- Demonstrate a basic knowledge of commands/menus/palettes/functions for vector-based software.
- Demonstrate a basic knowledge of commands/menus/palettes/functions for bitmap software.
- 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).
- Explain the rationale behind your design project—its benefits, and how it solves the project objectives.
- Form an analysis that uses critical thinking to determine whether a design achieves its desired objectives.
- Create a minimum of the following: one multi-layer image using bitmap software, one finished work using vector software.

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### 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:

- 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.
- Demonstrate how to structure a photo story by doing comprehensive research for the topic that has been selected.
- Understand how to structure a workable timeline and create contacts to complete the necessary images through access.
- Understand how to create a shooting list that is essential to create a strong narrative.
- Demonstrate shooting, editing and presentation of the completed story.

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### ART 221 - Graphic Design 1

4 Credit(s)

An introduction to design, layout, typography, and the design process from concept to mockup. Coursework includes necessary competencies for the Graphic Design program.

**Prerequisite:** ART 115, ART 116, ART 119 with a grade of B-

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- 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.

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**ART 222 - Graphic Design 2**

4 Credit(s)

An exploration of typical print design problems with an emphasis on layout strategy and concept. Coursework includes necessary competencies for the Graphic Design program.

**Prerequisite:** ART 221 with a grade of B- or better**Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- 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.
- Become familiar with the technical language and processes essential for the designer to create and finish an original graphic image.

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**ART 223 - Graphic Design 3**

4 Credit(s)

An Exploration of advanced graphic design problems as well as portfolio preparation. Students are exposed to professional and business issues in the field. Coursework includes necessary competencies for the Graphic Design program.

**Prerequisite:** ART 222 with a grade of B- or better**Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Have demonstrated a working knowledge of the graphic design field.
- Have clear understanding of the tools, advertising concepts and layout techniques to communicate a specific idea.
- Be familiar with the technical language and processes essential for the designer to create and finish an original graphic image.

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**ART 225 - Digital Illustration**

3 Credit(s)

Students gain experience in using vector software to create technical and creative illustrations. Coursework includes necessary competencies for the Graphic Design program.

**Prerequisite:** ART 216.**Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Have an understanding of the characteristics and advantages of object-oriented graphic programs.
- Be able to use illustration software to produce graphics and illustrations on the computer.
- Be able to modify and adapt type to solve design problems on the computer.
- Have an understanding of various methods of outputting electronically produced illustrations.

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**ART 227 - Graphic Design Production 1**

3 Credit(s)

An introduction to digital prepress production with emphasis on page layout software and professional standards of production. Coursework includes necessary competencies for the graphic design program.

**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:

- Identify the categories/terminology of typography.
- Demonstrate ability to professionally typeset and format text.
- Demonstrate ability to professionally proof text and layout for errors.
- Demonstrate mastery of intermediate functions of layout software.
- Demonstrate ability to follow a layout and produce artwork ready for reproduction.

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**ART 228 - Graphic Design Production 2**

4 Credit(s)

An intermediate course in digital prepress production. Coursework includes necessary competencies for the graphic design program.

**Prerequisite:** ART 227 with a grade of B- or better**Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Demonstrate professional typesetting, layout and proofing production skills.
- Identify technical issues of digital prepress including file size, file type,

resolution, embedded files, trapping, converting PMS, etc.

- Demonstrate ability to successfully produce a variety of design projects.
- Demonstrate ability to assess production requirements and troubleshoot problems.
- Produce a variety of graphic design projects (most from supplied layouts).

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**ART 229 - Graphic Design Production 3**

4 Credit(s)

An advanced course in digital production where students produce projects in a studio setting under professional conditions and standards.

**Prerequisite:** ART 228 with a grade of B- or better**Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Produce an estimate, schedule and bill for a project.
- Demonstrate ability to evaluate, adjust and color correct imagery.
- Demonstrate ability to successfully produce a variety of design projects that meet professional standards.
- Demonstrate ability to produce a given layout under timed conditions.
- Demonstrate ability to take a project from design to printing.

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**ART 231 - Drawing: Intermediate**

3 Credit(s)

ART 131 or instructor permission by portfolio. Emphasis on further development and exploration of drawing skills of observation, representation, composition, thematic development and critical analysis begun in ART131. Student will create and analyze projects that demonstrate critical and creative thinking and which demonstrate individual exploration of process and content. Individual and group critiques, discussions and presentations will expand the students' perceptions of the artistic process and drawing practice and theory within historical and cultural contexts. This course is recommended before taking any 200 level painting or printmaking course. 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:

- Demonstrate the understanding of drawing as process, as the result of physical activity, critical thinking, and intuition. Explore expressive possibilities within the drawing medium and critical understanding of composition and form. Develop and demonstrate increased ability to work with pre-conceived thematic ideas in an organized visual fashion.
- Demonstrate use of and analyze personal aesthetic choices in the creation of drawing projects, and relate personal projects to the greater context of specific art historical references and/or contemporary art issues.
- Demonstrate use of various drawing media, and use of clear and complex aesthetic and compositional elements in drawing. Demonstrate use of accurate perceptual drawing skills and increased understanding of conceptual drawing skills. (working with specific thematic ideas)
- Demonstrate the ability to discuss and lead discussions of art historical drawings, personal work and peer work in a constructive and analytical fashion related to specific drawing objectives.
- Demonstrate the use of art historical and/or contemporary issues within the drawing medium, including aesthetics, materials, technical concepts and content.
- Demonstrate and understanding of drawing issues as they pertain to art historical developments and other 2D disciplines, including painting and printmaking. Create drawing projects related to specific art historical or contemporary drawing issues.

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**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:

- Develop the student's ability to draw the human figure.
- Develop further the student's awareness of and understanding of form in light and space through use of human figure as subject.
- 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.

- Develop further the hand-eye-mind coordination skills needed to represent the human figure, the most complex and endless form of ideas.

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### ART 237 - Illustration 1

3 Credit(s)

An introduction to the field of illustration. Emphasis on developing skills in various illustration media, perceptual skills, compositional development, and basic thematic awareness, solving visual, conceptual problems and developing a personal style. Student will create and analyze projects that demonstrate critical and creative thinking and knowledge of drawing media and theory. This course satisfies the Intermediate Drawing level credit. Recommended for Graphic Design and Media Arts majors. This course is for Art and Applied Design majors and for non-art majors. 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:

- Identify and discuss common illustration technique.
- Identify major issues of print reproduction that apply to illustrators.
- Identify basic professional practices and legal issues that pertain to illustration.
- Solve basic illustration problems such as technical illustration, humorous illustrations, portraits and editorial illustration.

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### 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. Suitable for art, science, and general study students. Repeatable 3 times.

#### Learning Outcomes

Upon successful completion of this course, the student will:

- Have a foundational knowledge of techniques and materials used in natural science drawing.
- Have an understanding of the basic forms and structures in various life forms in nature.
- Be able to accurately draw 3D forms on a 2D surface.
- Create interesting and engaging compositions.
- Critique and critically assess own work and process.
- Demonstrate a positive attitude toward art-making, and working in a studio community.
- Accurate use of lighting, measuring tools, and equipment.

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### 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, the student should be able to:

- Demonstrate basic rendering skills that enable students to develop their ideas and visually communicate them to others.
- Demonstrate knowledge of storyboard conventions.
- Articulate the value of and demonstrate the stages of visualization and visual development of media design.
- Demonstrate the ability to effectively integrate typographic elements into sound/image communications.

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### 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:

- Expand their knowledge of historical and contemporary artists and sculptural methods.
- Develop a greater understanding of form/concept relationships.
- Have knowledge of materials and construction techniques typically used in stone sculpture work.
- Experience the process of design review; the standard process by which artworks are selected for public art projects.
- Learn critical thinking skills, as well as the ability to discuss and defend their artwork in a thoughtful manner.

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### ART 250 - Ceramics: Hand Building

3 Credit(s)

Introduces the materials, methods, and techniques of pottery design and construction. Emphasis on basic hand building skills, simple glaze application, and an understanding of fundamental pottery processes. It also includes the development of basic hand-eye-mind coordination for good form making, an introduction of historical, cultural, and modern trends and ideology. Students should plan on at least one term of this course and/or Ceramics: Wheel Throwing ART 251 before advancing to Ceramics: Intermediate ART 253.

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:

- Have a basic understanding of the sensibilities and techniques necessary for the construction of ceramic objects.
- Gain an understanding of hand building methods and simple glaze application.

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### 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. Student should plan on at least one term of this course and/or Ceramics: Hand Building ART 250 before advancing to Ceramics: Intermediate ART 253. 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:

- Have a basic understanding of the sensibilities and techniques necessary for the construction of functional ceramic ware.
- Gain a further understanding of hand building methods plus basic potter's wheel usage and glaze application.

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### 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:

- Develop further the student's understanding of and insight into the age old craft of pottery.
- 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.
- Develop a personal sense of craftsmanship.

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### ART 255 - Alchemy of Ceramics: Materiality, Chemistry, and Kiln Firing

3 Credit(s)

This class explores the basics of ceramic chemistry, materials and kiln firing practices. This information leads to experimentation, testing for various firing ranges, color, and textural possibilities which enhances student material



literacy, personal direction and goals in their studio work.

**Prerequisite:** ART 250.

#### **Learning Outcomes**

Upon successful completion of this course, the student will:

- have acquired an understanding of ceramic materials, applications and kiln firing processes.
- have the ability to independently test or mix clays and glazes to inform outcomes of studio work.
- use critical thinking to develop thoughtful approaches and creative problem solving in the use of ceramic material in personal art studio practice.
- exercise safe and healthy studio practices in the use of ceramic materials, chemicals and firing of kilns.
- exercised written & verbal skills documentation - written records of lab observations.&nbsp;nbsp;
- have a deeper knowledge base of ceramic theory, history and contemporary practice to inform individual studio work.

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#### **ART 261 - Photography 1**

3 Credit(s)

An introduction to the history and fundamentals of photography. Emphasis on camera handling, manual and semi-automatic exposure control, composition, and basic color theory. Includes a demonstration on the theory of black-and-white print making. Note: Students should have access to a camera with adjustable exposure controls.

#### **Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Have an introduction to basic photographic skills including design and composition. Basic camera function, black and white film developing and contact printing. Emphasis will be on teaching the students to see their environment in terms of photography.
- Operate controls of an adjustable camera including f/stops, shutter speed, focus, camera light meters, etc.
- Explain differences between major types of light meters and their uses. Including hand held reflected and incident meters, and built in meters.
- Explain proper exposure techniques involving relationship between f/ stops, shutter speed, light intensity and film sensitivity.
- Explain differences between available black and white negative film stocks and their recommended uses.
- Process black and white negative film.
- Use photo enlarger to make enlargements from black and white negatives, processing of black and white prints.
- Understand Photo presentation, including print spotting and dry mounting processing.
- Have a brief introduction to the history of photography, from Dageurre to Dr. Land.
- Understand basics of composition and seeing with the camera.

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#### **ART 266 - Off-Loom Fibers**

3 Credit(s)

Traditional and contemporary applications in fiber arts. Provides the opportunity to study non-woven textile processes. The content emphasizes a different focus from term to term, including: 2D and 3D fiber construction; art quilt construction, feltmaking, bookbinding, papermaking, and fabric printing; natural and synthetic dyeing; resist techniques of surface design; and chemical and mechanical techniques to manipulate cloth. 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:

- Discuss historical and contemporary applications of the nonwoven fiber art form.
- Demonstrate competency/ skill in fundamental techniques.
- Design and execute original artwork based on the textile processes.
- Demonstrate a satisfactory level of craftsmanship in the work.
- Articulate the content of the work with reference to materials and imagery.
- Be prepared for upper level coursework in this area in a baccalaureate program.

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#### **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 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. Recommended for Art and Applied Design majors as well as non-majors. May be repeated for up to 9 total credits.

#### **Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Demonstrate competency in intaglio printing techniques, both traditional and digital processes.
- Design and create original artwork based on intaglio printing techniques.
- Demonstrate a satisfactory level of craftsmanship in the artwork.
- Articulate the content of the work with reference to materials and visual imagery.

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#### **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. Recommended for Art and Applied Design majors as well as non-majors. May be repeated for up to 9 total credits.

#### **Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Demonstrate competency in the intermediate relief techniques
- Design and create original artwork based on relief techniques
- Demonstrate a satisfactory level of craftsmanship in the artwork
- Articulate the content of the work with reference to materials and visual imager.

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#### **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. Recommended for Art and Applied Design majors as well as non-majors. May be repeated up to 9 total credits.

#### **Learning Outcomes**

Upon successful completion of this course, the student should 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)

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#### **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. Recommended for Art and Applied Design majors as well as non-majors. 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:

- Demonstrate competency in the intermediate intaglio techniques.
- Design and create original artwork based on intaglio techniques.
- Demonstrate a satisfactory level of craftsmanship in the artwork.
- Articulate the content of the work with reference to materials and visual imager.

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#### **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:

- Demonstrate competency in the intermediate relief techniques .
- Design and create original artwork based on relief techniques.
- Demonstrate a satisfactory level of craftsmanship in the artwork.
- Articulate the content of the work with reference to materials and visual imager.

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#### **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:

- Demonstrate competency in screen-printing techniques.
- Design and create original artwork using screen-printing techniques.
- Demonstrate a satisfactory level of craftsmanship in screen-printing.
- Have a working knowledge of techniques, safe procedures, and related medium-specific vocabulary.
- Demonstrate a positive attitude towards screen-printing, art-making, and working in a studio community.

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#### **ART 276 - Sculpture: Introduction**

3 Credit(s)

A beginning course for students without prior training in sculpture. Explores fundamentals of sculptural processes and their aesthetic and theoretical considerations. Emphasizes development of hand-eye-mind coordination skills, understanding space and form, and the techniques of tool usage. Students complete a project in each basic process. Contents and expected learning proficiencies of this course vary from term to term. May be repeated up to 9 total credits.

#### **Learning Outcomes**

##### **3D Design Theory and Practice:**

- Students will create and analyze projects that demonstrate critical and creative thinking and knowledge of 3D/Sculptural theory and practice.
- Students will review and critique 3D art forms from diverse periods of human history.

##### **Creative and Critical Thinking/ Problem Solving:**

- Student will demonstrate personal aesthetic and conceptual decision-making using 3D/ Sculpture theory and practice.

##### **3D Design Aesthetic Elements and Principles:**

- Student will demonstrate knowledge and use of 3D design organizational principles and elements in various 3D Design media and processes.

##### **Art Historical Theory and Practice**

- Student will create images that reflect art historical and/or contemporary 3D Design practice and theory.

##### **Critiques – Discussion, Analysis and Application:**

- Students will analyze contemporary and/or historical art forms in relation to 3D Design media and theory.
- Students will explore and analyze cultural ideas as they pertain to art history and various art disciplines, such as painting, photography, and sculpture.
- Students will analyze and critique personal and peer artwork using specific 3D Design practice and theory.

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#### **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:

- Gain the basic coordination and perceptual skills for further progress in making sculpture.

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#### **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.

**Prerequisite:** Recommended ART 276 or ART 117.

#### **Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Study form and space as concepts in nature and the man made world.
- Study the relationship of form and space to materials and processes.
- Study evolution of concepts of form and space in history.
- Study the growth of an idea or concept through processes of sculpturing.

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#### **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, the student should be able to:

- Demonstrate the understanding of painting as process, as the result of physical activity, critical thinking, and intuition. Explore expressive possibilities within the painting medium. Develop and demonstrate the ability to work with pre-conceived thematic ideas in an organized visual fashion.
- Demonstrate use of and analyze personal aesthetic choices in the creation of painting projects, and relate personal projects to the greater context of specific art historical references and/or contemporary art issues.
- Demonstrate use of various painting media, and use of clear and complex aesthetic and compositional elements in painting. Demonstrate use of accurate perceptual painting skills and increased understanding of conceptual painting skills. (working with specific thematic ideas)
- Demonstrate the ability to discuss and lead discussions of art historical painting, personal work and peer work in a constructive and analytical fashion related to specific painting objectives.
- Demonstrate the use of art historical and/or contemporary issues within the painting medium, including aesthetics, materials, technical concepts and content.
- Demonstrate and understanding of painting issues as they pertain to art historical developments and other 2D disciplines, including drawing and printmaking. Create projects related to specific art historical or contemporary painting issues.
- Develop and demonstrate knowledge of painting theory and practice in projects created and in analysis and discussion of those products. Demonstrate individual visual, aesthetic and/or conceptual choices within the painting process.

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#### **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**

Upon completion of this course, students will be able to:

- Effectively represent landscape and architecture photographically
- Critique landscape and architectural photography
- Gain basic knowledge of the genres of architecture and landscape photography

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**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, the student should be able to:

- Demonstrate the understanding of painting as process, as the result of physical activity, critical thinking, and intuition. Explore expressive possibilities within the painting medium and critical understanding of composition and form. Develop and demonstrate increased ability to work with pre-conceived thematic ideas in an organized visual fashion.
- Demonstrate use of and analyze personal aesthetic choices in the creation of painting projects, and relate personal projects to the greater context of specific art historical references and/or contemporary art issues.
- Demonstrate use of various painting media, and use of clear and complex aesthetic and compositional elements in painting. Demonstrate use of accurate perceptual painting skills and increased understanding of conceptual painting skills. (working with specific thematic ideas) Relate content to form.
- Demonstrate the ability to discuss and lead discussions of art historical painting, personal work and peer work in a constructive and analytical fashion related to specific painting objectives.
- Demonstrate the use of art historical and/or contemporary issues within the painting medium, including aesthetics, materials, technical concepts and content.
- Demonstrate and understanding of painting issues as they pertain to art historical developments and other 2D disciplines, including drawing and printmaking. Create projects related to specific art historical or contemporary painting issues.
- Develop and demonstrate increased and specific knowledge of painting theory and practice in projects created and in analysis and discussion of those products. Demonstrate increased development of individual visual, aesthetic and/or conceptual choices within the painting process. Demonstrate clear understanding of composition and form.

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**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:

- Demonstrate competency in screen-printing techniques.
- Design and create original artwork using screen-printing techniques. 3. Demonstrate a satisfactory level of craftsmanship in contemporary screen-printing methods.
- Have a working knowledge of techniques, safe procedures, and related medium-specific vocabulary.
- Demonstrate a positive attitude towards screen-printing, art-making, and working in a studio community.
- Have a knowledge of color theory as applied to screen printing.
- Apply graphic techniques as a tool for generating high quality imagery.

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**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**

Upon successful completion of this course, students will be able to:

- Develop original animation character, through research, creation of narrative backstory, description of body mechanics, material sample-board and visual storyboard.
- Participate in Peer review utilizing common course specific language. Incorporate peer feedback and modify design according to specified design development process.
- Demonstrate the technical and creative skills to design, model and reproduce an animation character in 3D.
- Design mold, construct and cast multiple variations of character in various media.
- Apply the fundamentals of 3D Printing and Scanning.
- Demonstrate a broad understanding of 3D design principles, skills and processes required in design and animation fields.

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**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 web site design including an introduction to social media marketing.

**Learning Outcomes**

Upon successful completion of this course, students will be able to:

- Demonstrate understanding of the elements of design and of composition
- Demonstrate understanding and proper use of color and typography
- Demonstrate ability to create objectives and a design strategy.
- Define unique challenges of web design.
- Identify issues in navigation.
- Demonstrate knowledge of web site testing and marketing.
- Demonstrate effective use of an organizational grid in page design.
- Create an effectively designed web site.
- Identify issues of responsive web design.
- Demonstrate entry-level use of CSS for colors, backgrounds, formatting text and page layout.
- Demonstrate knowledge of current Web Standards through web authoring.

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**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 imagery for the web. Students will gain hands-on experience with modern tools and technologies including use of web-based tools and web authoring software. This course may be offered through Distance Learning, traditional classroom instruction, or as a hybrid course.

**Prerequisite:** ART 216 or MUL 212.**Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Identify and properly use file formats for web graphics.
- Identify issues of file size, compression, bit depth and color.
- Use a digital scanner.
- Create and animated GIF.
- Edit, enhance and manipulate digital images.
- Create graphic typography.
- Create icons and navigational buttons.
- Use tables as a design element.
- Identify terms and concepts specific to web imager.

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**ART 290 - Design Concepts for the Web**

3 Credit(s)

An intermediate study of web site design with an emphasis on informational architecture including strategy, planning, usability, and design of integrated web sites. May be offered as traditional classroom instruction, fully online, or as a hybrid course.

**Prerequisite:** ART 216 or MUL 212, and ART 289.**Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Define goals and create a design strategy.
- Identify cross-platform and cross-browser issues.
- Inventory content and develop organization structure for site.
- Create a clear and functional navigational system.
- Identify issues in accommodating users with disabilities.



- Identify multimedia options in web design.
- Create Cascading Style Sheets.
- Demonstrate advanced typographic techniques for web design.
- Identify standards for effective writing on the web.

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### 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:

- Expand their knowledge of historical and contemporary metal sculpting methods.
- Develop a greater understanding of form/concept relationships in their work.
- Develop knowledge of materials and carving techniques typically used in bronze sculpture.
- Learn critical thinking skills, as well as the ability to discuss and defend their artwork in a thoughtful manner.
- Broaden their knowledge of sculptural processes with the addition of mold making, welding and patina work.

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### 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 an 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:

- 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)
- Determine client's needs, discuss message and ideas already present. Research the project and meet with teammates to discuss. (CLO 1.2)
- Communicate project plan with client via Creative Brief for approval. (CLO 1.3)
- 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)
- Acquire all copy and images, do research on subject and check all content for verification, copyright and citation information as needed. (CLO 1.5)
- Find design solutions and defend them or integrate other relevant points of view as needed. (CLO 1.6)
- Assess public interface of media created. Understand responsibility of being a media-maker. (CLO 2.1)
- Get multi-cultural viewpoints on public Artwork and assess against possible perceptions by diverse population of new project at hand. (CLO 2.2)
- Assess impact of public art piece on a diverse community. (CLO 2.3)
- Work with others and experts as needed to vet possible interpretations and get proper feedback before execution of public art piece. (CLO 2.5)
- Attempt multiple ideas to achieve goals of project. (CLO 3.2)
- Use computers and other resources to produce designs for presentation. (CLO 3.3)
- 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)
- Determine best medium for goals of the project (CLO 4.1)
- Create designs that communicate the content on both verbal and non-verbal forms. (CLO 4.2)
- Consider target market demographic as well as the diverse population at large that may interface with the public art project. (CLO 4.3)
- Develop project with fully supported and vetted research and thoughtfulness for all aspects of the project. (CLO 4.4)
- 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)
- Learn team building and communication skills in order to work with others towards common goals of a public project. (CLO 4.6)

- 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)
- 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)
- Work within client budget, assess methods for effectiveness and cost, get quotes, look for money saving options, quote client. (CLO 5.3)
- 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)

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### 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.

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### 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:

- Achieve a working knowledge of the methods, materials and techniques needed to paint the kind of watercolor statements he/she wants to make.
- 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.

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### 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

Upon successful completion of this course, the student should be able to:

- To enable student with previous watercolor painting training or experience to develop further both in skill level, technique and expressive content in the medium of transparent watercolor.
- Upon completion of the course the student should demonstrate in his/her work an increased knowledge and capability in painting in watercolor

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### 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:

- Assess the mural job, assess the substrate, review design, think about problems both from a production and content standpoint (CLO 1.1).
- Determine production needs, ascertain and obtain all information and assets within timeline for deliverables (CLO 1.2).
- Communicate project plan with client via production and cost proposal (CLO 1.3).
- Discuss with team members and instructor and get feedback on process from all (CLO 1.4).
- 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).
- Define production methodology and discuss with team and instructor. Defend ideas or incorporate other feedback as necessary (CLO 1.6).

- Assess public interface of mural and discuss in class. Understand responsibility of public art and relate to history of mural making (CLO 2.1).
- Get multi-cultural viewpoints on design and message (CLO 2.2).
- Assess impact on a diverse community of public art (CLO 2.3).
- 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).
- Attempt multiple ideas to achieve best production of the project (CLO 3.1).
- Get feedback on ideas from teammates and assimilate idea into a cohesive production plan (CLO 3.2).
- Use computers and other resources to produce final product (CLO 3.3).
- 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).
- Determine best techniques and medium for project at hand (CLO 4.1).
- Create communication piece that informs the production process and budget to the client. Show both verbal and non-verbal examples (CLO 4.2).
- Consider the viewing public of the local or regional area as well as greater world context (CLO 4.3).
- Develop communication piece for client with fully supported and vetted research and thoughtfulness for all aspects of the project (CLO 4.4).
- Get feedback from many to determine if there is the possibility of double meanings, misinterpretations or any unintended miscommunication on projects (CLO 4.5).
- Learn team building and communication skills in order to work with others towards common goals of a public mural (CLO 4.6).
- Work with instructor, clients, materials and acquired skills to get mastery of both content creation and production (CLO 5.1).
- Apply learned techniques to the larger mural through repetition and instruction. Practice problem-solving learned on new areas of the mural (CLO 5.2).
- Work within client budget, get quotes, look for money saving options, quote client, oversee production of job to stay with budget (CLO 5.3).
- 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:

- Identify and demonstrate an understanding of the technical procedures and creator's role in art throughout the history of cultural production.
- Interpret and apply their understanding of the use and meaning of symbols and iconography throughout history to current issues, culture or history.
- Demonstrate and effectively communicate an understanding of the impact of religious, philosophical, and political beliefs on cultural production and communities.
- 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:

- Identify and demonstrate an understanding of the technical procedures and creator's role in art throughout the history of cultural production.

- Demonstrate and effectively communicate an understanding of the impact of religious, philosophical, and political conditions on cultural production and communities.
- Interpret and apply their understanding of the use and meaning of symbols and iconography throughout history to current issues, culture or history.
- 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. College-level reading and writing skills are strongly recommended for success in this course.

#### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Identify and demonstrate an understanding of the technical procedures and creator's role in art throughout the history of cultural production.
- Demonstrate and effectively communicate an understanding of the impact of religious, philosophical, and political conditions on cultural production and communities.
- Interpret and apply their understanding of the use and meaning of symbols and iconography throughout history to current issues, culture or history.
- 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. College-level reading and writing skills are strongly recommended for success in this course.

#### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Identify and demonstrate an understanding of the technical procedures and creator's role in art throughout the history of cultural production.
- Demonstrate and effectively communicate an understanding of the impact of religious, philosophical, and political conditions on cultural production and communities.
- Interpret and apply their understanding of the use and meaning of symbols and iconography throughout history to current issues, culture or history.
- 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. College-level reading and writing skills are strongly recommended for success in this course.

#### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Identify and demonstrate an understanding of the technical procedures and creator's role in art throughout the history of cultural production.
- Demonstrate and effectively communicate an understanding of the impact of religious, philosophical, and political conditions on cultural production and communities.
- Interpret and apply their understanding of the use and meaning of symbols and iconography throughout history to current issues, culture or history.
- 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. College-level reading and writing skills are strongly recommended for success in this course.

#### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Identify and demonstrate an understanding of the technical procedures and creator's role in art throughout the history of cultural production.
- Demonstrate and effectively communicate an understanding of the impact of religious, philosophical, and political conditions on cultural production and communities.
- Interpret and apply their understanding of the use and meaning of symbols and iconography throughout history to current issues, culture or history.
- Compose written or visual material to effectively communicate knowledge and demonstrate comprehension of art historical periods, styles, terminology, iconography, theory and artworks.

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#### 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. College-level reading and writing skills are strongly recommended for success in this course.

#### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Identify and demonstrate an understanding of the technical procedures and creator's role in art throughout the history of cultural production.
- Demonstrate and effectively communicate an understanding of the impact of religious, philosophical, and political conditions on cultural production and communities.
- Interpret and apply their understanding of the use and meaning of symbols and iconography throughout history to current issues, culture or history.
- Compose written or visual material to effectively communicate knowledge and demonstrate comprehension of art historical periods, styles, terminology, iconography, theory and artwork.

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#### 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. College-level reading and writing skills are strongly recommended for success in this course.

#### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Identify and demonstrate an understanding of the technical procedures and creator's role in art throughout the history of cultural production.
- Demonstrate and effectively communicate an understanding of the impact of religious, philosophical, and political conditions on cultural production and communities.
- Interpret and apply their understanding of the use and meaning of symbols and iconography throughout history to current issues, culture or history.
- Compose written or visual material to effectively communicate knowledge and demonstrate comprehension of art historical periods, styles, terminology, iconography, theory and artwork.

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#### 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. College-level reading and writing skills are strongly recommended for success in this course. 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](http://lanecc.edu/honors) for information.

#### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Identify and demonstrate an understanding of the technical procedures and creator's role in art throughout the history of cultural production.
- Demonstrate and effectively communicate an understanding of the impact of religious, philosophical, and political conditions on cultural production and communities.
- Interpret and apply their understanding of the use and meaning of

symbols and iconography throughout history to current issues, culture or history.

- Compose written or visual material to effectively communicate knowledge and demonstrate comprehension of art historical periods, styles, terminology, iconography, theory and artworks

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#### 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:

- Identify and demonstrate an understanding of the technical procedures and creator's role in art throughout the history of cultural production.
- Demonstrate and effectively communicate an understanding of the impact of religious, philosophical, and political conditions on cultural production and communities.
- Interpret and apply their understanding of the use and meaning of symbols and iconography throughout history to current issues, culture or history.
- Compose written or visual material to effectively communicate knowledge and demonstrate comprehension of art historical periods, styles, terminology, iconography, theory and artwork.

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#### 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:

- Identify and demonstrate an understanding of the technical procedures and creator's role in art throughout the history of cultural production.
- Demonstrate and effectively communicate an understanding of the impact of religious, philosophical, and political conditions on cultural production and communities.
- Interpret and apply their understanding of the use and meaning of symbols and iconography throughout history to current issues, culture or history.
- Compose written or visual material to effectively communicate knowledge and demonstrate comprehension of art historical periods, styles, terminology, iconography, theory and artwork.

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#### 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. May be offered online.

#### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Identify and demonstrate an understanding of the technical procedures and creator's role in art throughout the history of cultural production.
- Demonstrate and effectively communicate an understanding of the impact of religious, philosophical, and political conditions on cultural production and communities.
- Interpret and apply their understanding of the use and meaning of symbols and iconography throughout history to current issues, culture or history.
- Compose written or visual material to effectively communicate knowledge and demonstrate comprehension of art historical periods, styles, terminology, iconography, theory and artwork.

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#### 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. College-level reading and writing skills are strongly recommended..

### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Identify and demonstrate an understanding of the technical procedures and creator's role in art throughout the history of cultural production.
- Demonstrate and effectively communicate an understanding of the impact of religious, philosophical, and political conditions on cultural production and communities.
- Interpret and apply their understanding of the use and meaning of symbols and iconography throughout history to current issues, culture or history.
- Compose written or visual material to effectively communicate knowledge and demonstrate comprehension of art historical periods, styles, terminology, iconography, theory and artwork.

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### 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. May be offered online.

### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Identify and demonstrate an understanding of the technical procedures and creator's role in art throughout the history of cultural production.
- Demonstrate and effectively communicate an understanding of the impact of religious, philosophical, and political conditions on cultural production and communities.
- Interpret and apply their understanding of the use and meaning of symbols and iconography throughout history to current issues, culture or history.
- Compose written or visual material to effectively communicate knowledge and demonstrate comprehension of art historical periods, styles, terminology, iconography, theory and artwork.

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### 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. The course may be taught via distance learning, and 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:

- Identify and demonstrate an understanding of the technical procedures and creator's role in art throughout the history of cultural production.
- Demonstrate and effectively communicate an understanding of the impact of religious, philosophical, and political conditions on cultural production and communities.
- Interpret and apply their understanding of the use and meaning of symbols and iconography throughout history to current issues, culture or history.
- Compose written or visual material to effectively communicate knowledge and demonstrate comprehension of art historical periods, styles, terminology, iconography, theory and artwork.

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### 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:

- Identify and demonstrate an understanding of the technical procedures and creator's role in art throughout the history of cultural production.
- Demonstrate and effectively communicate an understanding of the impact of religious, philosophical, and political conditions on cultural production and communities.

- Interpret and apply their understanding of the use and meaning of symbols and iconography throughout history to current issues, culture or history.
- Compose written or visual material to effectively communicate knowledge and demonstrate comprehension of art historical periods, styles, terminology, iconography, theory and artwork.

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## Astronomy

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### 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:

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- Formulate questions to move their thinking forward concerning the subject matter of the class.
- 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.
- Reflect and communicate on possible uses and impacts of this physics knowledge regarding the solar system.
- Converse and write about the nature of science with increased sophistication and see physics/astronomy as a science, rather than a body of knowledge.
- 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.
- Appreciate current efforts to create new insights in this area of astronomy and have a sense of currently open questions within the astrophysics community.

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### 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:

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- Formulate questions to move their thinking forward concerning the subject matter of the class.
- 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.
- Be aware of possible uses and impacts of this physics knowledge.
- Converse and write about the nature of science with increased sophistication and see physics/astronomy as a science, rather than a body of knowledge.
- 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.
- Appreciate current efforts to create new insights in this area of astronomy and have a sense of currently open questions within the astrophysics community.
- Reflect and communicate on possible uses and impacts of this physics knowledge regarding cosmology and the large scale structure of the universe.
- Converse and write about the nature of science with increased sophistication and see physics as a science, rather than a body of knowledge.
- 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.
- Appreciate current efforts to create new insights in this area of astronomy and have a sense of currently open questions within the astrophysics community.

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### **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:

- 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.
- 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.
- 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.
- Converse and comprehend through communication using elementary descriptions and dynamical laws involved in the evolution of galaxies and the universe.
- 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.
- 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.
- Formulate questions to move their thinking forward concerning the subject matter of the class.
- 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.

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## **Audio Production**

### **AUD 120 - Audio Production**

4 Credit(s)

Basic theories and practices of audio production for video and multimedia. Includes the use of microphones, mini disc recorders, mixing consoles, and digital audio workstations for a variety of sound collection and processing applications.

#### **Learning Outcomes**

Upon successful completion of this course, students will be able to:

- Be familiar with basics of audio production for broadcasting, including microphones, turntables, audio tape, tape equipment, tape editing, mixing consoles, single and dual track recording, production of "spot" announcements and programs, and the application of good production to Broadcast Careers

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## **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:

- Identify the relationship between parts and the components and the purpose of the components in the structure of the vehicle.
- Demonstrate good workmanship including such characteristics as responsibility, reliability, and proper attitudes.
- Illustrate manipulative skills to the limit of the student's ability producing proper procedure and work patterns in skill development.
- Coordinate the acquired knowledge and the skilled application.
- Perform hydraulic system, drum brake, disc brake, power assist unit, and antilock brake system diagnosis and repair.

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### **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:

- Explain the operation and design characteristics of automotive internal combustion engines.
- Perform general engine diagnosis procedures and interpret the results.
- Perform cylinder head and valve train diagnosis and repair procedures.
- Perform engine block diagnosis and repair procedures.
- Diagnose and repair lubrication and cooling systems

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### **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.

### Learning Outcomes

Upon completion of this course, the successful student will be able to:

- Demonstrate diagnostic and repair procedures for steering and suspension components in common automotive use.
- Explain the function of various steering and suspension systems.
- Demonstrate tire and wheel repair and balance procedures.
- Demonstrate suspension alignment procedures.
- Explain the design and function of various power assist steering systems.
- Perform steering system; suspension system; and wheels and tires diagnosis and repair.
- Perform wheel alignment diagnosis, adjustment, and repair.
- Perform frame service and repair.

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### 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.

### Learning Outcomes

Upon completion of this course, the successful student will be able to:

- Demonstrate diagnostic and repair procedures for clutches; transmissions; transaxles; and rear axles and four-wheel drive components.
- Explain gear ratio and gear design theory.
- Demonstrate service and adjustment procedures for manual drive train components.
- Remove and replace drive train components.
- Perform drive shaft and half shaft universal and constant velocity joint repair.

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### 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:

- Explain the operation of hydraulic systems as applied to automatic transmissions and transaxles.
- Explain planetary gear operation and usage in automatic transmissions and transaxles.
- Explain the function and usage of friction and reaction components in automatic transmissions and transaxles.
- Identify electronic control devices used in automatic transmissions and transaxles.
- Demonstrate maintenance procedures and in-vehicle repairs and adjustments.
- Demonstrate in-vehicle diagnosis using commonly accepted tools and procedures.

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### 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:

- Explain the operation of electrical components and the systems in which the components operate.
- Demonstrate good craftsmanship.
- Select and use applicable service manuals and reference material when diagnosing and making repairs to electrical systems.
- Troubleshoot basic electrical system problems.
- Use the appropriate test equipment when troubleshooting electrical systems and determine the alternate methods of troubleshooting.

- Overhaul and calibrate various electrical system components.
- Properly perform a complete electrical system tune-up.
- Perform general electrical system diagnosis.
- Perform battery diagnosis and service.
- Perform starting system; charging system; lighting system; gauges, warning devices, and driver information systems; and accessories diagnosis and repair.

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### 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:

- 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.
- Identify the critical importance of the fuel delivery system, in terms of performance and economy as related to the internal combustion engine.
- 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.
- Demonstrate good craftsmanship.
- Select and use applicable service manuals and reference material when diagnosing and making repairs to fuel systems.

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### 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:

- Identify the relationship between parts and the components and the purpose of the components in the structure of the vehicle.
- Demonstrate good workmanship including such characteristics as responsibility, reliability, and proper attitudes.
- Illustrate manipulative skills to the limit of the student's ability producing proper procedure and work patterns in skill development.
- Coordinate the acquired knowledge and the skilled application.
- Diagnose and repair air conditioning systems; refrigeration system components; heating and engine cooling systems; and operating systems and related controls.
- Handle, recover, and recycle refrigerant.

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## 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 completion of this course, the successful student should be able to:

- Use and understand the principles of simple machines; sound, fluid, and heat dynamics; basic aerodynamics; aircraft structures; and theory of flight. Level 2
- Exercise mechanic privileges within the limitations prescribed by FAR Part 65 Level 3
- Identify and select appropriate nondestructive testing methods. Level 1
- Perform dye penetrant, eddy current, ultrasonic, and magnetic particle inspections. Level 2



- Perform basic heat-treating processes. Level 1
- Identify and select aircraft hardware and materials. Level 3
- Inspect and check welds. Level 3
- Perform precision measurements. Level 3
- Use aircraft drawings, symbols, and system schematics. Level 2
- Draw sketches of repairs and alterations. Level 3
- Use blueprint information. Level 3
- Use graphs and charts. Level 3

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#### 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 completion of this course, the successful student should be able to:

- Demonstrate ability to read, comprehend, and apply information contained in FAA and manufacturer's aircraft maintenance specifications, data sheets, manuals and publications, and related Federal Aviation Regulations, Airworthiness Directives, and Advisory material (Level 3: See AFRTS & PPRTS).
- Read technical data (Level 3: See AFRTS & PPRTS).
- Write descriptions of work performed including aircraft discrepancies and corrective actions using typical aircraft maintenance records. (Level 3: See AFRTS & PPRTS).
- Complete required maintenance forms, records, and inspection reports (Level 3: See AFRTS & PPRTS).
- Start, ground operate, move, service, secure aircraft, and identify typical ground operation hazards.
- Identify and select fuels.
- Fabricate and install rigid and flexible fluid lines and fittings.
- Identify and select cleaning materials.
- Inspect, identify, remove, and treat aircraft corrosion and perform aircraft cleaning.
- Perform airframe conformity and airworthiness inspections (Level 3: See AFRTS).
- Perform power plant conformity and airworthiness inspections (Level 3: See PPRTS)

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#### 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 completion of this course, the successful student should be able to:

- Calculate and measure capacitance and inductance.
- Calculate and measure electrical power.
- Measure voltage, current, resistance, continuity.
- Determine the relationship of voltage, current, and resistance in electrical circuits.
- Read and interpret aircraft electrical circuit diagrams, including solid state devices and logic functions (See General 104 for Levels 2 & 3 of solid state devices and logic functions”).

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#### 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 completion of this course, the successful student should be able to:

- Repair and inspect aircraft electrical system components; crimp and splice wiring to manufacturers' specifications; and repair pins and sockets of aircraft connectors.
- Install, check, and service airframe electrical wiring, controls, switches, indicators, and protective devices.
- Inspect, check, troubleshoot, service, and repair alternating and direct current electrical systems.
- Inspect, check, troubleshoot, constant speed and integrated speed drive generators.
- Read and interpret aircraft electrical circuit diagrams, including solid state devices and logic functions ( Levels 2 & 3 of solid state devices and logic functions” only. See General 103 for remaining instruction).

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#### 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 completion of this course, the successful student should be able to:

- Check and service fuel dump systems.
- Perform fuel management, transfer, and refueling.
- Inspect, check, and repair pressure fueling systems.
- Repair aircraft and engine fuel system components.
- Inspect and repair fluid quantity indicating systems.
- Inspect, check, service, troubleshoot, and repair aircraft and engine fuel systems.
- Troubleshoot, service, and repair fluid pressure and temperature warning systems.
- Inspect, check, service, troubleshoot, and repair electronic flight instrument systems, and both mechanical and electrical heading, speed, altitude, temperature, pressure, and position indicating systems to include the use of built in test equipment.
- Install instruments and perform a static system pressure leak test.
- Troubleshoot, service and repair electrical and mechanical fluid rate-of-flow indicating systems.
- Inspect, check, service, troubleshoot, and repair electrical and mechanical engine temperature, pressure, and RPM indicating systems. 12. Inspect, check, and service smoke and carbon monoxide detection systems.
- Inspect, check, service, troubleshoot, and repair aircraft and engine fire detection and extinguishing systems.
- Weigh aircraft.
- Perform complete weight-and-balance check and record data.

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#### 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:

- Assembling and Rigging Ice and Rain Control System Communication and Navigation Systems Welding.

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#### 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:

- Position and Warning Systems Air.Landing Gear Systems Hydraulic and Pneumatic Power Systems.

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#### 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:

- Sheet Metal Structures

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### 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:

- Wood Structures and Aircraft Covering Non-Metallic Structures Aircraft Finishes Cabin Atmosphere Control Systems Airframe Return to Service

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### 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 completion of this course, the successful student should be able to:

- Inspect and repair a radial engine.
- Overhaul reciprocating engine.
- Inspect, check, service, and repair reciprocating engines and engine installations.
- Install, troubleshoot, and remove reciprocating engines (see POWERPLANT 02, Turbines)

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### 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:

- Turbine Engines (removal and installation) and auxiliary power units

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### 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:

- Instruction and Engine Airflow Systems
- Engine Exhaust and Reverser Systems
- Ignition and Starting Systems
- Engine Cooling System

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### 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:

- Fuel Metering Systems
- Propellers and Unducted fans
- Lubrication systems

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### 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 RD 087; AND MTH 020 or higher, OR prior college, OR placement test.

### Learning Outcomes

Upon completion of this course, the successful student should be able to:

- Perform powerplant conformity and airworthiness inspections (Levels 1 & 2: See General 105).
- Item #1 inspections may include inspect, adjust, repair, replace, assemble, and/or rig aircraft: a) Fire detection and extinguishing systems; b) Landing gear retraction systems, shock struts, brakes, wheels, tires, and steering systems; c) Hydraulic and pneumatic power systems; d) Fuel systems; e) Alternating current and direct current electrical systems; f) Landing gear position indicating and warning systems.
- Inspect and repair sheet-metal structures.
- Assemble aircraft components including flight control surfaces.
- Balance, rig, and inspect movable primary and secondary flight control surfaces.
- Jack aircraft.
- Write descriptions of work performed including aircraft discrepancies and corrective actions using typical aircraft maintenance records (Levels 1 & 2: See General 102).
- Demonstrate ability to read, comprehend, and apply information contained in FAA and manufacturer's aircraft maintenance specifications, data sheets, manuals, and publications, and related Federal Aviation Regulations, Airworthiness Directives, and Advisory material (Levels 1 & 2: See General 102).
- Read technical data (Levels 3: See General 102).
- Complete required maintenance forms, records, and inspection reports (Levels 3: See General 102).
- Inspect and service batteries.

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### 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 RD 087; AND MTH 020 or higher, OR prior college, OR placement test.

### Learning Outcomes

Upon completion of this course ((Level 3 as applicable/FAR Part 147), the successful student will be able to:

- Perform powerplant conformity and airworthiness inspections
- Item #1 inspections may include inspect, adjust, repair, replace, assemble, and/or rig:
- Reciprocating engines and engine installations.
- Electrical and mechanical engine temperature, pressure, and RPM indicating systems.
- Engine fire detection and extinguishing systems.
- Lubrication systems.
- Reciprocating and turbine engine ignition systems.
- Reciprocating and turbine engine fuel metering systems.
- Engine fuel systems.
- Carburetor air intake and induction manifolds.
- Engine cooling systems.
- Engine exhaust systems.
- Fixed-pitch, constant-speed, and feathering propellers, and propeller governing systems.
- Install, check, and service engine, electrical wiring, controls, switches, indicators, and protective devices.
- Install, troubleshoot, and remove propellers.
- Repair aluminum alloy propeller blades.
- Write descriptions of work performed including aircraft discrepancies and corrective actions using typical aircraft maintenance records.
- Demonstrate ability to read, comprehend, and apply information contained in FAA and manufacturer's aircraft maintenance specifications, data sheets, manuals, and publications, and related .

- Complete required maintenance forms, records, and inspection reports.
- Read technical data.

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## Biology

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. Additional BI 101, BI 102, and BI 103 courses will count as electives.

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### 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.

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#### 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:
- Apply scientific inquiry to biological sciences, including exercises to study tides, osmosis, cellular biology and microbial population dynamics.
- Describe the steps involved in scientific inquiry and distinguish between a hypothesis and a theory; test hypotheses concerning phenomena observed in the wet-lab.
- Evaluate and critique scientific information from various sources (journals, magazines, newspapers, television, the internet) for scientific reliability and validity. Critique news articles on tsunami debris, whale strandings and other marine issues.
- Model the flow of information: the flow from genetic information (DNA) to phenotype. Relate protein synthesis to diatom frustule construction.
- Describe the role of evolution at a cellular and molecular level. Describe the marine origins of life and endosymbiotic acquisition of organelles.
- Apply and demonstrate concepts of Biology and Chemistry to understand metabolic pathways. Diagram epipelagic and sea vent food webs, including the sources of energy, autotrophy, heterotrophy and respiration.
- Demonstrate the use of scientific equipment and technologies, such as microscopes, data recorders, etc. Examine and photograph live aquatic microorganisms, measure outcomes of osmotic pressures and interact with live-stream whale research data.
- Model a cell and explain the role of the major components of the cell, including how the components work together for cell function and replication. Diagram a phytoplanktonic cell, including metabolic pathways for production of buoyancy enhancing oil droplets.
- Describe patterns of inheritance based on meiosis. Outline various forms of cell division, understand the importance of meiotic variation and relate mitosis to giant kelp growth.
- Identify sources of genetic variation based on mutation, meiotic processes and sexual reproduction. Relate ideas of variation to adaptations to a variety of marine environments.

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### 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:

- Apply scientific inquiry to biological sciences concepts.
- Describe the steps involved in scientific inquiry and distinguish between a hypothesis and a theory.
- Develop a vocabulary of appropriate terminology to effectively communicate information concepts in cell biology.
- Evaluate and critique scientific information from various sources (journals, magazines, newspapers, television, and the internet) for scientific reliability and validity.
- Model the flow of information: the flow from genetic information (DNA) to phenotype (physical traits).
- Describe the role of evolution at a cellular and molecular level.

- Apply concepts of Biology and Chemistry to understand metabolic pathways.
- Relate scientific technologies to their impact on various areas of society such as medicine, industry, environment, and agriculture.
- 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.
- Describe patterns of inheritance based on meiosis.
- Identify sources of genetic variation based on mutation, meiotic processes and sexual reproduction.

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### 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:

- Apply scientific inquiry to biological sciences concepts.
- Describe the diversity of plant life and differentiate between plants and other organisms.
- Evaluate and critique scientific information from various sources (journals, magazines, newspapers, television, and the internet) for scientific reliability and validity.
- Understand and describe how plant design relates to its function and ecosystem structure.
- Examine the role of coevolution between plants and humans, and distinguish between natural and artificial selection.
- Develop a vocabulary of appropriate terminology to effectively communicate information related to cell biology.
- Describe the steps involved in scientific inquiry and distinguish between a hypothesis and a theory.
- Apply concepts of Biology and Chemistry to understand metabolic pathways with an emphasis on photosynthesis and carbon cycling.
- Relate plant sciences technologies to their impact on various areas of society such as medicine, industry, environment, and agriculture.
- 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.
- Diagram plant life cycles and identify events and processes related to the alteration of generations.
- Describe patterns of inheritance based on meiosis and model the flow of genetic information from genotype (DNA) to phenotype (physical traits).

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### 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:

- Apply scientific inquiry to biological sciences concepts.
- Describe the steps involved in scientific inquiry and distinguish between a hypothesis and a theory.
- Develop a vocabulary of appropriate terminology to effectively communicate information related to microbial concepts.
- Evaluate and critique scientific information from various sources (journals, magazines, newspapers, television, and the internet) for scientific reliability and validity.
- Model the flow of information: the flow from genetic information (DNA) to phenotype (physical traits).
- Apply concepts of Biology and Chemistry to understand DNA replication and protein synthesis.
- Identify sources of genetic variation based on mutation, transformation, transduction and conjugation.
- Describe the role of evolution at a cellular and molecular level.
- Relate scientific technologies (Gene Therapy, Bioremediation, and Fermentation) to their impact on various areas of society such as medicine, industry, environment, and agriculture.
- 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.

- Describe the role of microbes in food manufacturing, industry and ecology.
- Recognize and explain the role of microorganisms in human health and disease.

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### 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. May be offered online.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Apply scientific inquiry to biological sciences concepts.
- Describe the steps involved in scientific inquiry and distinguish between a hypothesis and a theory.
- Develop a vocabulary of appropriate terminology to effectively communicate information related to human genetics and inheritance.
- Evaluate and critique scientific information from various sources (journals, magazines, newspapers, television, and the internet) for scientific reliability and validity.
- Model the flow of information: the flow from genetic information (DNA) to phenotype (physical traits).
- Describe the role of evolution at a cellular and molecular level.
- Apply concepts of Biology and Chemistry to understand DNA replication and protein synthesis.
- Relate genetic technologies (cloning, GMO, Gene Therapy) to their impact on various areas of society such as medicine, industry, environment, and agriculture.
- 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.
- Identify sources of genetic variation based on mutation, meiotic processes and sexual reproduction.

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### 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.

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### 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:

- 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.
- 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.
- 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.
- 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.
- 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.
- Develop a scientific inquiry project using a research question and

hypothesis about system level adaptations in a comparison of different taxa of marine organisms.

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### 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:

- Apply Scientific inquiry to biological systems
- Make a flow chart and describe the evolution of multicellularity: from cell to tissue to organ to organ system
- Accurately describe, illustrate, and explain the structure and function of different tissue types
- Model homeostasis and demonstrate both positive and negative feedback loops in biological systems
- Apply generalized models of homeostasis to new situations
- 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
- Compare and contrast how the above systems work in a variety of different organisms.
- Evaluate and critique scientific information from various sources for reliability and validity (journals, magazines, newspapers, television, and the internet).
- Analyze and evaluate case studies of diseases as they relate to the different organ systems.

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### 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:

- Apply scientific inquiry to biological sciences.
- Describe the steps involved in scientific inquiry and distinguish between a hypothesis and a theory.
- Make a flow chart and describe the evolution of vertebrate animals: from cell to tissue to organ to organ system.
- Accurately describe, illustrate, and explain the structure and function of different tissue types found in vertebrate animals.
- Model homeostasis and demonstrate both positive and negative feedback loops in biological systems found in vertebrate animals.
- Apply generalized models of homeostasis to new situations found in vertebrate animals.
- 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.
- Compare and contrast how the above systems work in Vertebrate Animals.
- Evaluate and critique scientific information from various sources for reliability and validity (journals, magazines, newspapers, television, and the internet).
- Analyze and evaluate Case studies of Vertebrate Animals as they relate to problems with their physiological needs.
- Engage in logical methodology and communicate via mathematical and graphical models.
- Describe the phylogenetic relationships among organisms and arrange them on a phylogenetic tree.
- Describe natural selection and speciation and be able to describe the evolution of a novel trait/species.
- Relate the structure of phylogenetic trees to the history of biological evolution.

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### 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. May be offered online.

### Learning Outcomes

Upon completion of this course, students will be able to:

- Apply Scientific inquiry to biological systems.
- 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.
- Compare and contrast how the above systems work in a variety of different organisms.
- Evaluate and critique scientific information from various sources for reliability and validity (journals, magazines, newspapers, television, and the internet).
- Analyze and evaluate case studies of diseases as they relate to the different organ systems and genetics.
- Make and analyze pedigrees for, autosomal dominant, autosomal recessive, X-linked dominant, X-linked recessive traits.
- Use Punnett squares to predict inheritance probabilities.
- Describe and explain the role of the both environment and genetics in complex traits and behaviors.
- Distinguish between sex, gender and sexual orientation and discuss the role of environment and genetics in the development of each.

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### 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:

- Apply scientific inquiry to biological systems.
- Make a flow chart and describe the evolution of multicellularity in plants, fungi and animals.
- Model homeostasis and feedback loops in biological systems for organisms that live in forests.
- 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, circulatory system, reproductive system, skeletal, endocrine and urinary.
- Compare and contrast how the above systems work in a variety of different organisms.
- Evaluate and critique scientific information from various sources (journals, magazines, newspapers, television, and the internet.) for reliability and validity.
- Identify common temperate forest plants and animals in young and late successional forests using dichotomous and pictorial keys.

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### 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. May be offered online.

### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Understand how humans maintain their internal environment.
- Identify ways organisms breathe, digest, excrete, reproduce etc. in widely varying life forms.
- Accurately describe, illustrate and explain the structure and function of different human tissue types.
- 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.

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### 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.

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### 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:

- Apply scientific inquiry to biological sciences.
- Describe the steps involved in scientific inquiry and distinguish between a hypothesis and a theory.
- Evaluate and critique scientific information from various sources (journals, magazines, newspapers, television, the internet) for scientific reliability and validity.
- Discuss, describe and explain the concept of evolution as a theory and as a fact, that can be investigated using scientific inquiry.
- Describe, evaluate, and demonstrate how selective advantages guided and influenced the evolution of a particular species.
- Describe natural selection and speciation and be able to describe the evolution of a novel trait or particular species/group.
- Describe the taxonomy and classification of various groups of organisms and apply this process to Avian examples.
- Describe the ecosystem roles of organisms, populations and communities and apply this concept to Avian examples.
- Describe and Diagram the flow of energy and matter through ecosystems and apply this concept to Avian examples.
- Apply in class terminology, identification skills, and knowledge to an outdoor setting with respect to Avian species.
- Relate patterns of population growth and climate change to ecosystem dynamics and apply this concept to Avian examples.
- Define sustainable resources use and describe how humans in ecosystems have caused Avian species to become endangered and/or extinct.
- Make accurate measurements and be proficient at using biological tools such as microscopes.

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### 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, students will be able to:

- Apply scientific inquiry to biological sciences. For example, objectively critique arguments for and against Makah Indian whaling.
- Describe the steps involved in scientific inquiry and distinguish between a hypothesis and a theory. Conduct field studies using hypothesis testing to reach conclusions about live sea birds and mammals. Calculate the ages of fossils using radioactive decay principles.
- Evaluate and critique scientific information from various sources (journals, magazines, newspapers, television, the internet) for scientific reliability and validity. Interpret population dynamic graphs to determine the validity of growth and decline arguments.
- Discuss the Theory of Evolution, defend hypothetical ancestry of whales, seals and birds. Describe evolutionary history and supporting evidence, including homologies, evo-devo arguments and adaptive radiation.
- Evaluate how selective advantages enhanced the evolution of species, including comparative anatomy of seal and sea lion hydrodynamics, whale migration patterns and tropic bird tails.
- Describe natural selection and speciation and be able to describe the evolution of a novel trait/species, including albatross courtship rituals, whale pelvic reduction, and many others.
- Describe the taxonomy and classification of various groups of organisms and recent advances in marine bird and mammal cladistics.

- Describe the ecosystem roles of organisms, populations and communities, and ecosystems. Describe the importance of phytoplanktonic producers and whale biomass contributions to chemosynthesis-based deep sea food webs.
- Diagram the flow of energy and matter through ecosystems. Diagram food webs and nutrient cycles in the sea, including the roles of detritivorous crustaceans, primary and secondary consumption by seals and whales and biomass contributions to nutrient-rich upwellings.
- Apply in class terminology and knowledge to an outdoor setting.
- Relate patterns of population growth and climate change to ecosystem dynamics. Use a systems approach to describing the sea otter-urchin-kelp ecosystem.
- Define sustainable resources use and describe how humans in ecosystems have caused species to become endangered. Explain the impacts of non-sustainable resource use (and other limiting factors) on carrying capacities and relate to the history of the whaling industry and to human population growth patterns.
- Make accurate measurements and be proficient at using biological tools such as microscopes. Use binoculars for field identification of sea birds and mammals, and various measuring instruments to conduct field research.

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### 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:

- Apply scientific inquiry to biological sciences.
- Describe the steps involved in scientific inquiry and distinguish between a hypothesis and a theory.
- Evaluate and critique scientific information from various sources (journals, magazines, newspapers, television, the internet) for scientific reliability and validity.
- Engage in logical methodology and communicate via mathematical and graphical models.
- Describe the phylogenetic relationships among organisms and arrange them on a phylogenetic tree.
- Describe natural selection and speciation and be able to describe the evolution of a novel trait/species.
- Relate the structure of phylogenetic trees to the history of biological evolution.
- Describe the ecosystematic roles of organisms, populations and communities.
- Diagram the flow of energy and matter through ecosystems.
- Evaluate selective advantages of various organismal interactions.
- Relate patterns of population growth to ecosystem dynamics.
- Define sustainable resource use and describe the role of humans in ecosystems.
- Make accurate measurements and be proficient at using biological tools such as microscopes, pipettes, etc.

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### 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:

- Apply scientific inquiry to biological sciences.
- Describe the steps involved in scientific inquiry and distinguish between a hypothesis and a theory.
- Evaluate and critique scientific information from various sources (journals, magazines, newspapers, television, the internet) for scientific reliability and validity.
- Examine a native habitat, describe the plant community and predict the interactions between organisms in that environment.
- Explain the basis for conservation efforts to save native plants and their habitats and the value of natural restoration efforts.
- Explain evolutionary processes and selection pressures that lead to flowering plant diversity.

- Identify useful, edible, and poisonous plants and describe how these relate to human activities.
- Discuss how the availability of our food (from plants) is related to the plant life cycle.
- Correctly identify 45-60 different plant families, on sight from key diagnostic characteristics.
- Describe and illustrate flower and leaf characteristics of an unknown species and apply the use of dichotomous keys for correct identification.
- Relate patterns of plant population growth to ecosystem dynamics.
- Evaluate selective advantages of various organismal interactions.

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### 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:

- Apply scientific inquiry to biological sciences.
- Describe the steps involved in scientific inquiry and distinguish between a hypothesis and a theory.
- Evaluate and critique scientific information from various sources (journals, magazines, newspapers, television, the internet) for scientific reliability and validity.
- Engage in logical methodology and communicate via mathematical and graphical models.
- Describe the phylogenetic relationships among organisms and arrange them on a phylogenetic tree.
- Describe natural selection and speciation and be able to describe the evolution of a novel trait/species.
- Relate the structure of phylogenetic trees to the history of biological evolution.
- Describe the ecosystematic roles of organisms, populations and communities.
- Diagram the flow of energy and matter through ecosystems.
- Evaluate selective advantages of various organismal interactions.
- Relate patterns of population growth to ecosystem dynamics.
- Define sustainable resource use and describe the role of humans in ecosystems.
- Make accurate measurements and be proficient at using biological tools such as microscopes, pipettes, etc.
- Relate the scientific evidence of global climate change to its current impact on Earth.
- Describe the values of the natural world held by peoples of western civilization and among American Indians.
- Describe native people's relationship with their natural world and how they interact with flora and fauna.

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### 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:

- Describe the diversity of fungal life and differentiate between fungi and other organisms.
- Describe natural selection and explain evolutionary processes and selection pressures that lead to fungal diversity.
- Correctly identify 30-50 useful, edible, and poisonous mushrooms and describe how these are related to ecosystem structure and human activities.
- Describe the phylogenetic relationships among fungi and arrange them on a phylogenetic tree.
- Diagram the basic fungal classification system and apply correct use of scientific nomenclature.
- Apply scientific inquiry to biological sciences.
- Evaluate and critique scientific information from various sources (journals, magazines, newspapers, television, the internet) for scientific reliability and validity.
- Apply current sampling methodology protocol to understand and describe how and why fruiting body production varies through seasons.



- Examine a habitat and describe the ecological processes and predict interactions between fungi and the other organisms in that environment.
- Diagram the flow of energy and matter through ecosystems and describe how fungi participate in the processes.
- Evaluate selective advantages of various organismal interactions.
- Relate patterns of population growth to ecosystem dynamics.
- Describe and illustrate fruiting body characteristics of an unknown species to apply the use of a dichotomous key for identification.

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### 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:

- Accurately describe, illustrate and explain the evolution of land plants.
- Analyze & explain the functioning of selected plant systems including the reproductive, vascular, defense, nutrients, and immune, and evaluate their impact on human physiology.
- 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.
- 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.
- Recognize, explain and apply the principle of homeostasis and the use of feedback loops to control physiological systems in plants.
- 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.
- Identify local edible, medicinal, and culturally significant plants through the study of plant reproductive, defense, and signaling systems.
- 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.
- 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.

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### 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. May be offered online.

#### Learning Outcomes

Upon completion of this course, students will be able to:

- Communicate more effectively about Science.
- Have an increased ability to make informed decisions about biological issues.
- Have an increased awareness & appreciation of all life on Earth.
- Demonstrate the ability to conduct and to understand scientific inquiry.
- Explain the evolutionary processes that shape the unity and diversity of organisms on Earth and contribute to characteristics and adaptations.
- Understand the principles underlying the classification of organisms and be able to describe the distinguishing features of the major categories of organisms.
- Understand hierarchical levels of biological organization (molecular to biosphere).
- Understanding of the critical interactive role among organisms (including humans) and be able to use of this information in decision-making.

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### 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:

- Apply scientific inquiry to biological sciences. Understand government

use and misuse of science.

- Describe the steps involved in scientific inquiry and distinguish between a hypothesis and a theory.
- Evaluate and critique scientific information from various sources (government, environmentalist, industry) for scientific reliability and validity.
- Engage in logical methodology and communicate via mathematical and graphical models.
- Describe the phylogenetic relationships among organisms and arrange them on a phylogenetic tree.
- Describe natural selection and speciation and be able to describe the evolution of a novel trait/species.
- Compare and contrast historical evolutionary changes and modern anthropogenic changes.
- Relate the structure of phylogenetic trees to the history of biological evolution.
- Describe the ecosystematic roles of organisms, populations and communities.
- Diagram the flow of energy and matter through ecosystems and explain how this relates to the sustainability of the ecosystem.
- Evaluate selective advantages of various organismal interactions.
- Relate patterns of population growth (both wild and human) to ecosystem dynamics.
- Define sustainable resource use and describe the role of humans in ecosystems.
- Describe human reliance on the natural world, anthropogenic threats to natural systems.
- Relate poverty, education, equitability and tolerance to sustainability.
- Explain the damage done by invasive exotics, deforestation, pollution and desertification.
- Make accurate measurements and be proficient at using biological tools such as microscopes, pipettes, etc.

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### 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. Prerequisite for Anatomy and Physiology BI 231. Lab included.

**Corequisite:** CH 112

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Properly and effectively use a microscope to observe and measure prepared slides, cells and living organisms.
- Describe and model the processes of cell growth and division including how the process is regulated and consequences of the loss of regulation.
- Relate the structure of DNA to its replication, role in protein production, and importance in human genetics and diseases.
- Predict human inheritance patterns based on cellular genetics.
- Explain how animal cells acquire and use energy and how this process is regulated.
- Outline the structures of a cell and describe the function of each.
- Summarize how cells respond to and communicate with the external environment.
- Evaluate the role of emerging genetic technologies on human health care.

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### 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:

- 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.
- 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.

- 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.
- Conduct an experiment using enzymes. Identify enzyme properties manipulated in the lab.
- Compare and contrast the scientists responsible for the discovery of the structure of DNA. Build and describe a segment of DNA. Describe DNA replication.
- 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.
- Model the movement of chromosomes through the processes of mitosis and meiosis. Identify order and describe the structures visible in micrographs.
- Collect data and/or analyze data for genetic patterns of inheritance.
- Compare and contrast metabolic pathways of aerobic and anaerobic cellular respiration, and photosynthesis. Connect pathway function with cellular structure.
- Apply knowledge of cell structure and evolution to support the theory of endosymbiosis.
- Analyze and draw conclusions from data in table or graph form.
- Collect, manage, and share data within a single lab.
- Analyze a primary or secondary scientific article for the new and old hypotheses and support.

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### 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:

- Draw and explain a model of homeostasis and feedback loops in biological systems. Apply these general concepts to a new situation.
- Construct a cladogram from an organism/trait matrix illustrating the evolution of life from single-celled protists to multicelled plants and animals.
- Compare the two cladograms and synthesize evolutionary trends within autotrophs and heterotrophs.
- Analyze and draw conclusions from data in table or graph form.
- Locate, evaluate, and utilize appropriate scientific research when predicting outcomes of experiments.
- Collect, manage, and share data across multiple sections for a multi-week experiment.
- Analyze data from large data sets to support individual hypotheses. Critique limits of data.
- Differentiate the goals of both basic and applied research and give examples of each to demonstrate the similarities and differences between them.

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### 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:** Grade of C- or better in BI 211 and BI 212 or instructor consent.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Draw and describe characteristics that define the Anthophyte clade from all other plant clades.
- Construct a phylogenetic tree showing major flowering plant clades with key characters that distinguish the each clade.
- Discuss the trends in flowering plant evolution.
- Explain the ecological mechanisms and selective pressures that underlay those trends.
- Use climate and topographic maps to identify the floristic regions in Oregon.

- Complete a descriptive report of plant community structure including plant associations, biodiversity assessment and the biological interactions that take place in a biological community.
- Describe a plant in detail using descriptive botanical terminology.
- Identify an unknown plant using a botanical key.
- Identify on-sight at least 150 native and naturalized plants of Lance Co. Oregon by binomial and family, spelled correctly.
- Identify on-sight and use of morphological characteristics approximately 40 flowering plant families by scientific name, spelled correctly.
- Conduct plant ecology research from experimental design through data collection and analysis and final reporting.

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### 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:** Grade of C- or better in BI 212 and BI 212 or instructor consent.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Use the concept of evolution to describe current populations with potential natural selection pressures.
- Define the term species using at least two different definitions. Compare and contrast these definitions for a given real-world situation.
- Compare and contrast dissections for internal anatomy similarities and differences across vertebrate examples. Propose evolutionary pressures that caused differences to arise.
- Construct a cladogram for the evolution of vertebrates, filling in the key character changes. Hypothesize alternative cladograms and critically analyze these alternatives.
- Design and complete a population survey. Identify weaknesses in design and describe limits to sampling. Describe population data using mean and standard deviation statistics.
- Build a mathematical model of population growth curves. Analyze the mathematical differences between exponential and logistical growth curves.
- 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.
- Compare and contrast climate change and ozone depletion. Predict effects of both on populations. Use primary literature to argue for effects.
- Analyze and draw conclusions from primary literature.
- Analyze and draw conclusions from data in table or graph form.
- Locate, evaluate, and utilize appropriate scientific research when predicting outcomes of experiments.
- Collect, manage, and share data across multiple sections for a multi-week experiment.
- Analyze data from large data sets to support individual hypotheses. Critique limits of data.

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### 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. May be offered online. Lab included.

**Prerequisite:** Grade of C- or better in BI 112 and CH 112.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Develop a vocabulary of appropriate terminology to effectively communicate information related to anatomy and physiology.
- Recognize the anatomical structures and explain the physiological functions of the integumentary, skeletal, muscular, articular body systems and the autonomic nervous system.
- Recognize and explain the principle of homeostasis and the use of feedback loops to control physiological systems in the human body.
- Utilize anatomical knowledge to predict physiological consequences, and apply knowledge of function to predict the features of anatomical structures.
- 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.

- Utilize microscopes to identify specific tissues and structures in histology.
- Interpret anatomical and physiological data and graphs regarding homeostasis, muscle and neural physiology.
- Approach and examine issues related to the integument system, skeletal, muscle and neural physiology and autonomic nervous system from an evidence based perspective.
- 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.

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### 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. May be offered online. Lab included.

**Prerequisite:** Grade of C- or better in BI 231

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Develop a vocabulary of appropriate terminology to effectively communicate information related to anatomy and physiology.
- Recognize the anatomical structures and explain the physiological functions of the nervous, cardiovascular, hematological, lymphatic and immune systems.
- Recognize and explain the principle of homeostasis and the use of feedback loops to control physiological systems in the human body.
- Utilize anatomical knowledge to predict physiological consequences, and apply knowledge of function to predict the features of anatomical structures.
- 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.
- Utilize microscopes and/or other appropriate technology to identify structures and histology of the organ systems studied in BI232.
- Interpret anatomical and physiological data and graphs regarding hematology, cardiac cycles, EKGs and blood pressure hemodynamics. Conduct and interpret EKG recordings .
- Recognize and explain the interrelationships within and between anatomical and physiological systems of the human body.
- Approach and examine issues related to the nervous, cardiovascular and immune systems from an evidence-based perspective.
- 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.

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### 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. May be offered online. Lab included.

**Prerequisite:** Grade of 'C-' or better in BI 232

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Develop a vocabulary of appropriate terminology to effectively communicate information related to anatomy and physiology.
- 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.
- Recognize, explain and apply the principle of homeostasis and the use of feedback loops to control physiological systems in the human body.
- Utilize anatomical knowledge to predict physiological consequences, and apply knowledge of function to predict the features of anatomical structures.
- 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.
- Utilize microscopes and/or other appropriate technology to identify

structures and histology of the organ systems studied in BI233.

- 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.
- Recognize and explain the interrelationships within and between anatomical and physiological systems of the human body.
- 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.
- 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.

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### 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:** Grade of C- or better in BI 233 or instructor consent

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- 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.
- 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.
- Demonstrate laboratory procedures and techniques used to inoculate, incubate, isolate, inspect and identify microorganisms. Evaluate the efficiency of select chemotherapeutic agents.
- Utilize microscopes and/or other appropriate technology to identify the morphological and biochemical properties of parasites studied in BI234.
- Explain and apply the principles of microbial growth, microbial control, infectious disease prevention and treatment, therapeutic agents, and vaccinations.
- Document and report on experimental protocols, results and conclusions.
- Examine issues related to the field of microbiology from a clinically-oriented, evidence-based perspective.
- Recognize and explain the principle concepts underlying the pathogenesis of infectious disease and innate and acquired immunological response.
- Apply knowledge of microbiology to explain and predict the pathogenesis of representative infectious diseases and likely outcomes.
- 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.
- 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.

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## 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 should be able to:

- Describe the importance of the economic system in U.S. business environments
- Describe the role of social responsibility and ethics in business and identify some business examples
- Compare forms of business ownership and the role of entrepreneurship



- Describe the importance of international business and information technology to today's businesses
- 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
- Compare marketing strategies, including product, price, and promotion, and distribution methods
- Explore opportunities for investment, finance, and international trade within the business environment
- Work successfully as a member of a team to investigate a business and produce a team report

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### BA 206 - Management Fundamentals

4 Credit(s)

Prerequisites: BA 101. 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 should be able to:

- Distinguish leadership from management.
- Evaluate how structures, cultures, and chains of command achieve the goals of an organization.
- 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.

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### BA 211 - Financial Accounting

4 Credit(s)

Sophomore standing recommended. 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 should 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.

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### 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 should 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.

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### BA 214 - Business Communications

4 Credit(s)

Introduction to communication theory with emphasis in writing direct, indirect, and persuasive letters, and a formal researched report. Introduction to appropriate formatting of business documents using proper grammar, formatting, tone, and effectiveness. Business-related presentations that inform, recommend, and train will be given.

**Prerequisite:** BT 108 and WR 121.

#### Learning Outcomes

Upon successful completion of this course, the student should 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.

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### 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.
- List the different types of advertising and describing which method is best given certain situations.
- Illustrate the relationship between price, value, and quality.
- Differentiate the factors that affect pricing policy.
- Recognize how the major elements of the marketing process apply to actual marketing situations.
- State ways in which ethics can be integrated into the marketing process.
- Understand the importance of relationship marketing.
- Understand how legal issues affect marketing strategies.
- Evaluate key trends in the global environment.
- Understand the best practices in the contemporary marketing process.
- Incorporate enhanced decision-making among promotional tools and determining cost effectiveness.
- Understand the advertising strategies in a contemporary marketing campaign.

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#### **BA 224 - Human Resource Management**

4 Credit(s)

This course is an introduction to Human Resource Management. The course is designed to explore the functions, roles, and value of Human Resources. Discussion topics include aspects of planning, talent acquisition, performance management, employment laws, motivation, employee relations, and workforce development. May be offered online.

**Prerequisite:** BA 101

#### **Learning Outcomes**

Upon successful completion of this course, students will be able to:

- Demonstrate understanding of HR planning and analysis by developing a strategic HR plan, monitoring implementation all while working within a budget.
- Demonstrate understanding of Talent Acquisition by developing a recruitment plan, and evaluating selection and onboarding decisions.
- Demonstrate understanding of Performance Management. Including comparing evaluations, appraisals, career development , employee development and corrective actions. Students will also discuss challenges in employee relations.
- 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.
- 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.
- 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.

- 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.

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#### **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 should be able to:

- Understand how the origins of the U.S. Constitution and how it impacts business today.
- Understand how the law and the court system affect their lives.
- Understand employment, labor and wage law.
- Understand the nature and importance of the contractual relationship, elements of a contract, and how those elements apply to business situations.
- Have a working knowledge of the law and social sources which shape and determine the law.
- Have an awareness of the increasingly complex relationship of individuals and business organizations and the need for critical objective analysis of situations.

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#### **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 should be able to:

- Utilize concepts borrowed from the behavioral sciences to gain a better understanding of the nature of buyers.
- Define proven techniques for locating qualified customers.
- Create the favorable conditions that are important in approaching customers.
- Apply the major methods for gaining attention of prospective customers.
- Apply the major techniques for handling sales resistance to given sales situations.
- Articulate the importance of active listening as a means for gaining customer interest and uncovering relevant information.
- Recognize the typical types of buying signals.
- Articulate the need for ethical behavior by salespeople.
- Demonstrate the major techniques for closing the sale.
- Identify some of the more common warning signs of deteriorating customer relations.

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#### **BA 249 - Retailing**

4 Credit(s)

Retailing examines types of retail stores, merchandising, operations, store location and layout, internal organization, buying, customer relations, inventory control, and retail communications in the evolving global, high tech, retail to e-tail business environment. Students will focus on real-world examples and work on a broad spectrum of issues through Internet, team, and classroom activities.

**Prerequisite:** BA 223

#### **Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Understand the purpose of retailing and the retail environment.
- Understand customer buying behavior, customer value, and the importance of creating long-term customer relationships.
- Identify various forms of retailing and types of retailers.
- Understand purchasing and inventory control.

- Understand the role of the sales support function.
- Understand the responsibilities of the retail operations function.
- Understand the importance of market, location, and pricing.
- Understand retail communication and marketing strategies.
- Identify careers and opportunities in retailing.

- Engage in building effective teams.
- Lead by empowering others.
- Understand the human reactions to change and the skills necessary to lead or act as a change agent.
- Understand and implement the theories of servant leadership.

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### 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:

- Understand his or her motivations and the reality of owning a small business.
- Be able to analyze and compare the attractiveness of various locations.
- Know the advantages and disadvantages of various sources of funding and be able to evaluate the appropriateness of different funding sources.
- Be able to use the income statement, balance sheet and cash flow statements to improve business decisions and performance.
- Know the major components of a marketing plan and be able to briefly outline a condensed marketing plan
- Evaluate and select from a variety of advertising opportunities.
- Be able to review and determine the appropriate risk management and/or insurance levels.
- Understand the value of beneficial relationships with wholesalers and know how to promote positive wholesaler relations.
- Understand the legal implications of being a business owner and understand the value of being mindful of legal implication while working with operational issues.
- Be familiar with the various compliance requirements from local, state and federal agencies.
- Be able to select the appropriate type of business entity for various business endeavors based on the needs of a business.
- Understand the components, development and use of budgets and be able to prepare simple budgets.
- Understand, outline and evaluate the components of a business plan.
- 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.

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### 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.

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### 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 should be able to:

- Understand the advantages, disadvantages, and circumstantial uses of various leadership styles.
- Lead by creating, articulating, and fostering a shared vision.
- Identify, clarify, and set clear, challenging, obtainable, and measurable goals.
- Understand various ethical tools and the reasoning behind various ethical positions.
- Demonstrate improved decision-making skills by utilizing a process approach.
- Identify and constructively resolve organization, team, and interpersonal conflicts.

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### 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 should be able to:

- Analyze the process of making personal financial decisions.
- Understand the concept of opportunity cost.
- Create a system for maintaining personal financial documents.
- Create and implement a budget based on personal balance sheet and cash flow statement as starting points.
- Compare the costs and benefits of different savings and checking plans.
- Measure personal credit capacity and articulate steps to avoid and correct credit mistakes.
- Determine the cost of credit by calculating interest with various interest formulas.
- Understand the process of becoming a home owner and the potential tax advantages.
- Define risk management and evaluate methods of managing risk, including insurance.
- Identify the major types of investments available and when they are appropriate.
- Discuss the advantages and disadvantages of various investment strategies including asset allocation and dollar cost averaging.
- Discuss why people invest in common stock and how stocks are bought and sold
- Discuss why people invest in bonds and how they are bought and sold.
- Explain the role of mutual funds in investing planning.
- Discuss various investment evaluation strategies including, volatility as measured by standard deviation, beta, technical and fundamental analysis.
- Recognize the importance of retirement and college planning and estimate retirement financial needs and resources.
- Be proficient in the use of present and future value formulas for a lump sum and annuities.
- Evaluate competing employee benefit alternative and maximize the utilization of employee benefits.
- Apply PV and FV formulas to retirement planning, bond pricing and college planning scenarios.
- 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.
- Calculate and interpret basic investment ratios such as ROI, range and standard deviation.
- Be familiar with the common features and benefits of employer provided retirement plans and health insurance.
- Be familiar with the purpose and importance of basic estate planning tools, such as wills, advanced directives, and living trusts
- Be familiar with the impact of estate taxes and various planning tools to minimize the impact of estate taxes.

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## Business Technology

### BT 015 - Keyboard Skillbuilding

3 Credit(s)

Students will diagnose and correct keying deficiencies through prescribed drills leading to improved speed and accuracy while keying by touch. Students will also create and correctly format business documents.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Operate the computer using the QWERTY keyboard to complete assigned tasks.
- Correct keyboarding problem areas through diagnostic testing and



evaluating and corrective practice drills

- Demonstrate improvement in keyboarding speed and accuracy on numeric, alphabetic, and alphanumeric materials through timed keyboarding tests.

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### 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:

- Use computer and manual proofreading and editing tools.
- Use reference sources to verify information when proofreading.
- Apply the various methods to proofreading documents.
- Recognize and apply grammar and English usage rules when proofreading.
- Recognize and apply formatting rules to documents.
- Use reference tools, grammar and formatting rules in proofreading to produce mailable documents.
- Understand and apply language and communication skills used in business settings.
- Utilize the computer to compose fundamental workplace appropriate paragraphs for business documents and business e-mail.
- Develop a portfolio of rules and examples to solve workplace communication problems.
- Train other students on specific communication problems in business.
- Evaluate research sources and analyze the quality of information.

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### BT 120 - MS WORD for Business

4 Credit(s)

As an introduction to word processing, students apply MS WORD to create business documents. Focus is on reviewing Windows; editing and formatting documents; applying document refinements to enhance written communication; working efficiently using mail merge and macros; working with shared documents; and managing documents. This course will also explore Google docs and their business application.

**Prerequisite:** Recommend familiarity with Windows operating system and the ability to accurately type 30 words per minute.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Navigate the Windows operating environment.
- Create, format, save, edit, paginate, and print documents.
- Format characters, paragraphs, pages, and sections.
- Insert dates, times, page numbering, headers/footers, file names, special characters/symbols.
- Work with and format documents such as letters with envelopes/labels, memos, reports, and newsletter-style columns with headers and footers with the assistance of the Spelling and Grammar check, Thesaurus, AutoComplete, AutoCorrect and AutoText.
- Apply document refinements such as nonbreaking spaces, hyphenation, and line and page breaks.
- Create, edit, and format tables.
- Work with multiple document windows.
- Apply and modify column settings.
- Create documents using styles and templates.
- Work with graphics.
- Mail merge.
- Manage electronic documents.

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### 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. Recommend the ability to accurately type 30 words per minute and key 130-132 strokes per minute on an electronic calculator (or numeric keypad). Visit [lanecc.edu/business](http://lanecc.edu/business) for Business Department keyboarding guidelines or contact the instructor for details.

### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Create, modify, and manage common business workbooks and worksheets for organizations of any size.
- Use cell, row and column, and worksheet formatting techniques to create professional-looking spreadsheets.
- Use absolute and relative cell references to create flexible formulas and functions.
- Analyze data through the use of filters, pivot tables, formulas, and functions.
- Create, modify, and position diagrams and charts based on worksheet data.
- Apply and modify cell formats and styles, row and column formats, and worksheet formats.
- Use sophisticated Excel functions to perform sensitivity analysis to solve business problems.
- Manage workbooks by using templates, moving, inserting, deleting content, organize worksheets, setup pages for printing, file management and saving data in appropriate formats.

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### BT 144 - Administrative Procedures

4 Credit(s)

This course introduces students to a wide variety of office procedures, practices, and skills needed to be efficient and effective in the changing office environment. Students will work on developing soft skills and technical skills through projects, practice, and discussions. Keyboarding, formatting, and grammar skills will also be reinforced.

**Prerequisite:** BT 108, BT 120, and WR 121. Recommend the ability to accurately type at least 35 words per minute. Visit [lanecc.edu/business](http://lanecc.edu/business) for Business Department keyboarding guidelines or contact the instructor for details.

#### Learning Outcomes

Upon successful completion of this course, the student will be able to:

- Demonstrate personal characteristics needed to work individually and with a team in an office environment.
- Use written and oral communication skills to serve internal/external clients.
- Demonstrate office-related skills to maintain daily office operations.
- Conduct job search activities.
- Apply problem-solving skills individually and in a team.
- Demonstrate an understanding of customer service and its importance to an employer
- Define professionalism, understand how it relates to individual career development, and be able to apply principles of professionalism in various settings.
- Demonstrate a basic understanding of standard filing rules and principles.
- Demonstrate a basic understanding of the use of various filing methods, including alphabetic, numeric, subject, and chronological.
- Prepare accurate and professional business documents, including, but not limited to, letters, memos, informal reports, agendas, minutes, itineraries, and news releases.
- Proofread documents for typographical, spelling, grammatical, and mechanical faults, and evaluate placement of message on the page.
- Use equipment and supplies to complete office tasks.
- Use the library and the Internet for business research.
- Continue the development of keyboarding skill with accuracy and speed to enhance the production of mailable documents within specified time frames.

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### 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:

- Prepare a business web page plan. Develop consistent design, navigation, and content to appeal to a target audience.
- Complete a business Web page.
- Use XHTML and Cascading Styles to develop a business Web site.
- Know the basics of styles and style sheets.

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**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 165 or BA 211**Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Demonstrate the ability to convert files to QuickBooks and develop a chart of accounts from scratch.
- Reconcile checking accounts and integrate QuickBooks with Online banking features.
- Design and utilize QuickBooks as a tool to efficiently meet an organizations tax compliance responsibilities.
- Demonstrate proficiency in and the ability to analyze and record business transactions via business forms, the general journal, and registers.
- Demonstrate proficiency in editing, deleting, voiding, and verifying transactions.
- Demonstrate proficiency in applying QuickMath and Windows Calculators to forms, registers, and the general journal.
- Create and edit Chart of Accounts, Customer Lists, Vendor List, Item List, Employee List, and Payroll Items.
- Purchase and manage inventory and track back orders.
- Generate and analyze Financial Statements, Reports, and Graphs.
- Demonstrate knowledge of accounting for cash.
- Apply with proficiency the complete accounting cycle to both a service and merchandising business.
- Set up and process payroll, including the generating of payroll reports.
- Apply QuickBooks for job estimating, time tracking, and progress invoicing.
- Customize forms and reports with adding your company's logo to your forms.
- Apply on-line accounting for banking and payroll.
- Manage your business with Business Centers.
- Integrate QuickBooks with MS Excel and MS Word.
- Demonstrate the ability to convert a manual set of books to QuickBooks.
- Be able utilize QuickBooks software to create budgets and forecasts.
- Demonstrate knowledge of the functionality of the financial statement designer, business planner and fixed asset manager tools provided in QuickBooks.
- Be able to set passwords, closing dates and utilized appropriate reports to create adequate internal control processes in QuickBooks.

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**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, the student should be able to:

- Analyze and record business transactions.
- Record transactions using appropriate journals and ledgers (general and subsidiary).
- Perform all steps necessary to complete the accounting cycle for merchandising and service firms.
- Prepare balance sheet, income statement and statement of owner's equity for a sole proprietorship.
- Maintain customer and creditor accounts in subsidiary ledgers.
- Prepare bank reconciliation and use a petty cash system and change fund.
- Complete two introductory integrated manual problems.
- Understand the link between accounting data and the underlying business reality.
- Maintain legally required payroll records, perform calculations related to payroll and benefits, and record payroll in accounting records.
- Complete worksheets and journalize adjusting and closing entries. Post entries to ledger accounts.

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**BT 170 - Payroll Records and Accounting**

4 Credit(s)

Introduces federal and state regulations affecting payroll. Provides practice

in all payroll operations, including accounting entries, and the preparation of payroll tax returns that are required of business. Course will provide a manual practice set and a computerized practice set.

**Prerequisite:** BT 165 - Introduction to the Accounting Cycle 4 Credit(s)

Recommend BT123 MS EXCEL for Business.

**Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Interpret principal laws and regulations governing payroll and benefits.
- Identify and use reference sources to answer questions related to payroll.
- Maintain payroll records necessary for accounting information and for legal compliance.
- Perform calculations related to payroll and benefits.
- Record payroll in journals and registers.
- Prepare state and federal payroll tax reports.

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**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 which is critical to success in all organizations. Students will have the opportunity to become certified Guest Service Gold Professional through the Oregon Restaurant and Lodging Association.

**Learning Outcomes**

Upon successful completion of this course, the student will:

- Define what Customer Service is, and understand the importance of providing outstanding customer service.
- Develop a customer service ethic and the importance of customer satisfaction in an entities success.
- Be able to identify internal and external customers and understand their unique roles as consumers.
- Learn general communication skills, such as the importance of first impressions, body language.
- Learn effective customer service-related telephone skills and etiquette.
- Learn effective customer service-related written communication skills.
- Be able to clarify customer needs, respond appropriately, and deal with difficult customers.

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**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:

- Understand the role of budgets in planning, implementing and controlling to achieve organizational goals.
- Understand the trade-offs between budgets as a planning tool versus a controlling tool.
- Be able to identify cost, revenue and profit centers and understand the potential uniqueness of budgeting for each.
- Be able to complete the process of designing and creating a budget.
- Have a basic understanding of the technology and other tools commonly used in budgeting.
- Define the key components of a successful budget.
- Explain the use and application of an operating budget.
- Define the process and techniques of budgeting, including the types of budgets. (static, flexible, incremental, zero based)
- Apply cost behaviors (fixed, variable and mixed) to the budgeting process.
- Be able to prepare a budget based on data and criteria that reflect the relational nature of key variables.
- Understand the relationships and uses of current financial statements, pro forma statements, budgets, forecasts and financial modeling.
- Understand budget gaming and the behavioral aspects of budget development and implementation.
- Be able to monitor budgets and utilize variance analysis to practice management by exception.
- Understand conceptually some of the mathematics applied to budgeting, forecasting and projecting for organizations.

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**BT 223 - MS EXCEL for Business-Expert**

4 Credit(s)

Advanced Excel functions for business problem solving. Focus on creation of effective business spreadsheets to assist managers in decision making.

**Prerequisite:** BT 123 and MTH 095 or higher, or instructor consent. Recommend the ability to type 30 words per minute. Visit [lanecc.edu/business](http://lanecc.edu/business) for Business Department keyboarding guidelines or contact the instructor for details.

**Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Create, modify, share, and manage complex business workbooks and worksheets for organizations of any size.
- Use templates, automated procedures, and the Web to retrieve, analyze, and summarize data.
- Organize and analyze data through use of scenarios, solver, Lookup and Reference functions, and Database functions.
- Use text functions to parse, convert and manipulate text.
- Use business-modeling tools to perform what-if analysis.
- Build and use financial formulas.
- Know how to learn new Excel tools independently and be able to teach the skill to others.
- Use linking of cells, formulas, functions, worksheets and workbooks to gather information and complete analysis.
- Successfully complete the Microsoft Office Specialist: Excel 2003 Expert exam should the student choose to take the exam.

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**BT 228 - Integrated Office Applications**

4 Credit(s)

Advanced software applications course to review, apply, and expand skills. Students need a strong background in MS Word and MS Excel and familiarity with PowerPoint and Access. New skills include practice with other applications and current Web technologies. Emphasis on problem solving, creativity, teamwork, and communication both written and verbal. This course includes outside skills assessment and individual identification of growth areas with a personal plan of attainment created and assessed. Continued development of keyboarding skills.

**Prerequisite:** BT 123, BT 144, BT 220. Recommend the ability to accurately type at least 40 words per minute. Visit [lanecc.edu/business](http://lanecc.edu/business) for Business Department keyboarding guidelines or contact the instructor for details.

**Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Use basic functions of database and presentation software along with more advanced functions of word processing and spreadsheet software to produce business documents.
- Complete projects that integrate features of the various MS Office applications.
- Produce professionally formatted business documents in all software applications.
- Complete projects quickly, efficiently, and with 100% accuracy suitable for presentation or mailing.
- Solve problems related to computer software and technology in the production of business documents.
- Assist others with solving problems related to production of business documents.
- Create and use efficient methods of electronic document organization.
- Communicate with others in a professional manner to solve problems and complete work projects.
- Maintain a professional attitude toward work and others.

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**BT 230 - Sustainable Paperless Practices using Adobe Acrobat**

4 Credit(s)

Information and document management in a paperless office using Adobe Acrobat Professional to create and edit PDF documents, forms, and portfolios. Will include managing data and documents in a collaborative digital environment. Will also include research and planning of paperless office systems; electronic record keeping; ethical, legal, and technical issues of electronic data; disaster recovery and security.

**Prerequisite:** BT 120 with a minimum grade of C. Recommend the ability to accurately type approximately 30 words per minute. Visit [lanecc.edu/business](http://lanecc.edu/business) for Business Department keyboarding guidelines or contact the instructor for details.

**Learning Outcomes**

Upon successful completion of this course the student should be able to:

- Demonstrate knowledge of the project management process for starting and maintaining a paperless office.
- Demonstrate knowledge of document and information management principles, including security, retention, storage planning, documentation, training, and implementation.
- Demonstrate knowledge of disaster recovery, safety, and security of electronic records.
- Demonstrate ability to use a high-volume scanner to digitize paper documents.
- Demonstrate ability to use Adobe Acrobat Pro to: combine files into PDF portfolios, enhance and edit PDF documents, add digital signatures and create secure documents, create fillable and non-fillable forms and create multimedia presentations.

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**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:

- Apply situational analysis to marketing planning and implementation.
- Design marketing plans that include digital communications, customer relationship management, and customer feedback.
- Map the roles and responsibilities of internal participants in internet marketing efforts.
- Facilitate online marketing strategies and identify viable tools and resources.
- Identify, monitor, and analyze demographic and consumer behavior data.
- Design marketing mixes that include digital media.
- Optimize marketing communications for various digital platforms including social media platforms.
- Evaluate and promote sustainable, ethical marketing practices.
- Continuously improve marketing's contribution by understanding consumer behavior and search engine algorithms.

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**BT 270 - Project Management**

4 Credit(s)

Basic computer literacy and software application skills. This course covers essential skills needed to manage small-scale projects. The course features the phases of the project life cycle including definition, planning, implementation, monitoring, and termination. The emphasis is on the tools, practical methods and strategies that technology professionals use to manage successful projects and teams.

**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:

- Identify and describe the knowledge, skills and abilities of effective project managers.
- Prepare effective project planning documents.
- Define project scope, timelines, budgets and assess potential risks.
- Identify and describe issues regarding resource procurement.
- Identify and describe strategies to manage project quality and customer satisfaction.
- Use effective tools to manage time and schedules.
- Identify and describe issues regarding project team communications and conflict resolution.
- Explain how to monitor and track project progress and correct related problems.
- Describe professional certifications available to project managers.
- Identify and describe ethical issues that may impact projects.

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**BT 271 - Administrative Office Professional Advanced Projects**

4 Credit(s)

Students participate in dynamic business simulations while working as team members in a professional environment. Includes professional practice in using integrated software skills, applying office procedures, communicating orally, digitally, and in writing, analyzing information, making decisions, prioritizing, and using time management skills.

**Prerequisite:** BT 228. Recommend the ability to accurately type at least



45 words per minute. Visit [lanecc.edu/business](http://lanecc.edu/business) for Business Department keyboarding guidelines or contact the instructor for details.

### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Function professionally and effectively as an individual and as a team member in a variety of work-related situations.
- Perform a range of office procedures using a variety of industry-standard software and equipment.
- Communicate in oral and written format in a diverse office environment.
- Analyze and interpret information to make decisions that accomplish the goals of a variety of projects.
- Collaborate with colleagues to recognize problems, develop potential solutions, and evaluate the effectiveness of the results.

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### 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:

- Understand and competently articulate key terms and concepts.
- Research and find information pertinent to tax preparation and decision making.
- Properly calculate adjusted gross income, tax liabilities, depreciation amounts, capital gains and effective tax rates.
- Analyze and determine whether to use an itemized or standard deductions.
- Prepare individuals taxes including individual forms, schedule c (sole proprietor) and accompanying schedule for capital gains and depreciation amounts.
- Perform analysis to determine the after-tax consequences of various investment alternatives.
- Prepare simple corporate taxes on form 1120 with associated schedules.
- Identify common strategies for reducing an individuals effective tax rate.
- Discern between strategies of tax avoidance and tax evasion.
- Discuss the tax implications of starting and dissolving a business entity.
- Understand the implication of special allocations of various tax items due to specific partnership agreements.
- Account for a partner's basis in a partnership.
- Be familiar with some of the common business credits.
- Be familiar with a start up companies' tax elections and accounting for start up costs.
- Prepare basic form 1065 and schedules K-1 for partnerships.

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### 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:

- Identify and correct a variety of common accounting errors.
- Properly account for various accruals and deferrals.
- Utilize and prepare trial balances, worksheets and financial statements.
- Be conversant in wage and hour laws and issues.
- Prepare and describe adjusting entries on a worksheet or in general journal form.
- Prepare common payroll entries.
- Depreciate assets for tax and financial purposes using a variety of methods.
- Prepare journal entries to record depreciation and disposal of assets.
- Identify and prepare both perpetual and periodic inventory entries.
- Value inventory and cost of goods sold, utilizing LIFO, FIFO and weighted average costing method.
- Be able to identify common small business internal control deficiencies and suggest improvements.
- Demonstrate intermediate level skills in the preparation of cash flow statements.
- Apply objectives A-J in a life-like practice set.

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### 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 and BT 123

### Learning Outcomes

Upon successful completion of this course:

- Directs and coordinates the activities of businesses or departments.
- Manages a staff by preparing work schedules and assigning specific duties.
- Reviews financial statements, sales and activity reports, and other performance data to measure productivity.
- Establishes and implement departmental policies, goals, objectives, and procedures.
- Determines staffing requirements and overseeing personnel processes.
- Monitors businesses practices to ensure they efficiently and effectively provide needed services.
- Communicates with supervisors, peers, or subordinates.
- Establishes and Maintains Interpersonal Relationships.
- Resolves conflicts and negotiates with others.
- Makes decisions and solves problems.

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## Career Development/Human Relations

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### CG 140 - Career and Life Planning

1-3 Credit(s)

This course focuses on self-assessment, career exploration, and goal setting, using a variety of activities and resources. You will gain insight into your interests, strengths, skills, values, and life roles; research majors and career fields; and create a vision and next steps for your future.

### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Broaden knowledge of selves and career options.
- Learn how skills, interests, values and personal preferences relate to life goals.
- Identify and develop confidence in skills and strengths.
- Utilize a variety of career information resources and strategies to explore options.
- Develop skills for making decisions and setting goals.
- Identify beliefs, influences, and barriers that impact their decisions.
- Develop a career "action plan," outlining goals and next steps.
- Recognize that career planning is a lifelong process.

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### CG 140T - Career and Life Planning: WIT

3 Credit(s)

This course is designed to help students in Women in Transition plan their careers and their lives. This course will explore: self-awareness, values, interests, skills, personality styles, available careers, careers that fit personal wants and needs, steps to pursuing career goals, how to make decisions, weigh options, and set goals.

**Corequisite:** CG 220.

### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Have become aware of personal values, interests, skills and personality styles and how this relates to career choices.
- Be able to identify and explore the options in the work world.
- Learn about college and community resources that can assist in making good career and life decisions.
- Have made progress towards setting clear career goals and be able to continue this process using the skills developed in class, etc.

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### 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. May be offered online.

## Learning Outcomes

Upon successful completion of this course, the student should be able to:

- 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.
- 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.
- Describe the characteristics of an effective work team, the typical stages of team development, and how to be a capable team member.
- Understand the issues involved in working with people from different cultural backgrounds and how to work effectively in a diverse workplace.
- Describe and demonstrate the rules of principled negotiation” and conflict resolution.

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### CG 207 - Life Transitions 2

3 Credit(s)

This course is designed to assist students in enhancing their ability to navigate life changes in powerful and positive ways, building on the skills and knowledge gained in the first Life Transitions course. Topics include: responding successfully to changing personal and professional demands, strengthening resiliency and self-esteem, establishing and maintaining healthy relationships, and setting and attaining personal and academic goals. Class activities will stress practical and personal application of course information.

**Prerequisite:** CG 220

## Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Have increased the ability to set, enact, and attain academic, career and personal goals.
- Have learned new skills for responding successfully to changing personal and professional demands.
- Have increased knowledge of personal, career and academic resiliency.
- Have increased ability to establish and maintain healthy personal and professional relationships.
- Have developed skills and behaviors to increase and sustain self-esteem.
- Have gained understanding of personal and professional strengths, limitations and new options for reducing limiting behaviors and emotions.

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### CG 210 - Life Transitions 3

3 Credit(s)

This course is focused on the concept of “life as a relationship to everything.” It is designed to assist students in their capacity to identify the enduring components of healthy attachment and relational connections that actively contribute to their well-being and ability to successfully achieve their educational goals. Topics include: attachment theory, the effect of trauma on relational capacity, relationship mapping and the exploration of relational narratives, multicultural, gender and historical perspectives on relationships, looking beyond family and intimate partnerships in defining relationships and creation of positive relational attachments at Lane Community College.

**Prerequisite:** CG 220

## Learning Outcomes

Upon successful completion of this course, the student will:

- Develop an applied understanding of attachment theory and its impact on an array of relational concepts.
- Use critical thinking skills to create an effective, detailed plan to work successfully with over-activated attachment systems.
- Understand multicultural, gender, class, religion, and historical perspectives on interconnection, disconnection and interrelatedness.
- Incorporate relationship mapping and relational concepts into a personalized model of relational energy expenditures and understand the ways relational quality impacts quality of life.
- Develop a relational engagement model of learning experiences at Lane that embodies the central “life as a relationship” principles of attachment theory and that reflects each student’s active sense of relationship with Lane.

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### CG 213 - Improving Parent Child Relations

3 Credit(s)

View real life in-home parent-child interactions with a focus on building creditability 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. May be offered online.

## Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Observe parent and child behaviors and use a goal-directed model of interpretation.
- Identify typical and problematic parent-child interactions and principals and skills for improvement.
- Identify issues that interfere with developing positive parent-child relations.
- Identify strengths that facilitate the development of positive relationships.
- Determine constructive relationship goals and methods to move toward them.
- Reduce barriers to communication, problem solving and limit setting.
- Learn specific skills of encouragement and effective communication.
- Learn a system of child guidance that is based on principles of encouragement, reasonable influence, and humane intervention rather than compliance and punishment.
- Test comprehensive knowledge of a child guidance system.

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### CG 220 - Life Transitions: Women in Transition

4 Credit(s)

This course is designed to help students in Women in Transition navigate their current life transitions and explore positive new life directions. Topics include: understanding life transitions, relationships, increasing self-esteem, coping with powerful emotions, developing healthy power and assertiveness).

**Corequisite:** CG 140T

## Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Exercise practical application of major models of transition and have constructed a personal model for future transitions .
- Know the factors that impact the development of self-esteem, assertiveness, and attitudes of perseverance in the face of obstacles.
- Utilize healthy strategies of dealing well with anxiety, depression, grief and anger during and after major transitions.
- Apply the six stages of healthy relationship development to personal, academic and professional settings.
- Recognize the seven elements of an enduring life philosophy and understand its goal-setting uses.
- Use theoretical models of self-concept, authentic, false and shadow selves to deal effectively with difficult individuals.

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# Chemistry

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### 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:

- Verbalize, write about, or make/draw models to show knowledge of chemical terms, symbols, and concepts.
- Use quantitative problem-solving techniques at a beginning level.
- Demonstrate use of laboratory materials, methods, and safety procedures.
- Gather and interpret laboratory and other data.
- Use personal computers, graphing software, and internet resources.
- Demonstrate and appreciate scientific processes and ideas.
- Predict chemical composition, shape and properties and use this information to explain natural phenomenon.
- Measure and apply mathematical relationships to scientific observations.

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### 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 Anatomy and Physiology 1, BI 231.

**Prerequisite:** Grade of C- or better in CH 104 or instructor consent.

#### Learning Outcomes

Upon successful completion of this course, the student will:

- Compare and contrast the structure, function and metabolism of carbohydrates, lipids and proteins.
- Predict chemical composition, shape and properties and to use this information to explain natural phenomenon on the nano and macroscopic scale.
- Given a chemical transformation, classify the reaction and describe and quantify the outcomes.
- Apply the Laws of Thermodynamics to describe and calculate changes in energy during transformations of matter.
- In a laboratory setting, collect data, safely use common glassware, and apply lab techniques ubiquitous in organic and biochemistry to form evidence-based conclusions.
- Logically communicate complex chemical phenomenon orally and written explanations.
- Critically analyze and develop arguments supporting or denying nutritional/biochemical studies and media claims.

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#### 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:

- Define and organize the structural levels of particulate matter, from subatomic particles to macromolecules.
- Describe the consequences and origin of water's polarity and its importance to cellular structure and processes.
- Predict the physical and chemical properties of organic compounds based on structure and functional groups.
- Explain how the structure and chemistry of small precursor molecules contribute to the diversity of biomolecules.
- Analyze, describe and model processes that occur in biochemical reactions, such as redox and acid/base chemistry.
- Outline important metabolic processes that occur in human cells and the associated matter and energy transformations.

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#### 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:

- 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.
- 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.
- 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.
- 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.
- Engage with others and work safely in a lab, use proper lab techniques.
- 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.

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#### 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:

- Use measurements written in scientific notation.
- 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.

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#### 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.

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#### 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.

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### 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.

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### CH 221 - General Chemistry 1

6 Credit(s)

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. Lecture and laboratory with online lecture for Laboratory. Lab emphasizes green chemistry.

**Prerequisite:** MTH 095 with grade of C- or better or place into MTH 111 or higher on math placement test.

#### Learning Outcomes

Upon successful completion of this course, the student will:

- Lecture: gather, interpret, and analyze data and error, and communicate findings to demonstrate understanding of basic chemical concepts and reactions.
- Lecture: 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.
- Lecture: use and describe real life situations as examples to demonstrate and explain key chemical concepts such as fuel selection and ammonia synthesis.
- Lecture: 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.
- Lecture: understand and explain the evolution of the atom from Dalton to quantum mechanics.
- Lab: demonstrate chemical lab techniques such as pipet use, weighing by difference, glassware selection and use, gravity filtration, vacuum filtration.
- Lab: working safely in the lab.
- Lab: maintain a scientific notebook, write lab reports.
- Lab: demonstrate understanding and awareness of green chemistry, analyze greenness of labs.
- Lab: gather, interpret, and analyze data and error, and communicate findings to demonstrate understanding of basic chemical concepts and reactions.
- Lab: 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.

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### CH 222 - General Chemistry 2

6 Credit(s)

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. Lecture and laboratory with hybrid lab lecture; lab emphasizes green chemistry and real world applications.

**Prerequisite:** Grade of C- or better in CH 221.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Lecture: gather, interpret, communicate, and analyze data and error to demonstrate understanding of basic chemical concepts and reactions.
- Lecture: 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
- Lecture: 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.
- Lecture: use and describe real life situations as examples to demonstrate and explain key chemical concepts.
- Lecture: assess the strengths and weaknesses of different theories of bonding including valence bond theory and molecular orbital theory and apply each theory appropriately.
- Lab: demonstrate chemical lab techniques such as pipet use, weighing by difference, glassware use, gravity filtration, vacuum filtration, titration.
- Lab: working safely in the lab.
- Lab: maintain a scientific notebook, write lab reports.
- Lab: use LoggerPro software to gather and interpret data.
- Lab: demonstrate understanding and awareness of green chemistry, analyze greenness of labs.
- Lab: gather, interpret, and analyze data and error, and communicate findings to demonstrate understanding of basic chemical concepts and reactions.
- Lab: 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.

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### CH 223 - General Chemistry 3

6 Credit(s)

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. Lecture and laboratory with hybrid lab lecture. Lab emphasizes real world applications.

**Prerequisite:** Grade of C- or better in CH 222.

#### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Lecture: gather, interpret, communicate, and analyze data and error to explore ideas, models and solutions and generate further questions.
- Lecture: 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 creative insight.
- Lecture: use and describe real life situations as examples to demonstrate and explain key chemical concepts.
- Lecture: 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.
- Lecture: examine relationships with other subject areas, including the ethical application of science in human society, and the relevance of science to everyday life.
- Lab: demonstrate chemical lab techniques such as pipet use, dilution, glassware use, titration.
- Lab: working safely in the lab.
- Lab: maintain a scientific notebook, write lab reports.
- Lab: use LoggerPro software and pH meters to gather and interpret data.
- Lab: gather, interpret, and analyze data and error, and communicate findings to demonstrate understanding of basic chemical concepts and reactions.
- Lab: 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.

- Lab: review, analyze, and summarize a current chemistry article published in C & E New (Chemistry and Engineering) and evaluate the article using the CRAPP rubric.

### CH 241 - Organic Chemistry

6 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. Lecture and laboratory.

**Prerequisite:** Grade of C- or better in CH 222

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Describe the bonding and geometry of organic molecules.
- Apply the principles of resonance to the structures and energies of organic molecules.
- Apply the principles of equilibrium and kinetics to organic reactions.
- Identify and describe the stereochemical aspects of the structures of organic molecules.
- Apply the principles of acid-base chemistry to organic reactions.
- Apply the principles of inductive and steric effects to the reactivities of organic molecules.
- Evaluate the reactants and solvents and be able to predict both the products and the reaction mechanism for SN2, SN1, E2 and E1 reactions.
- 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.
- Apply knowledge of specific reactions to synthesis problems.
- Use the Principles of Green Chemistry to evaluate chemical reactions.
- 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.
- Apply laboratory techniques to the preparation and/or characterization of a variety of organic compounds.
- Use analytical techniques such as melting point determination and spectroscopic techniques to identify laboratory products.
- Use chemical references to gather information about organic compounds.
- Keep a proper laboratory notebook and report experimental results using a formal report.
- Evaluate experiments both qualitatively and quantitatively for technique, results, and to analyze experimental errors.

### CH 242 - Organic Chemistry

6 Credit(s)

Organic chemistry for science and health science majors, with a green chemistry emphasis. Topics include alcohols, ethers, aromatics, conjugated systems, aldehydes, and ketones. Lecture and laboratory.

**Prerequisite:** Grade of C- or better in CH 241.

#### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Explain the theory of nuclear magnetic resonance (NMR) as it applies to the evaluation of organic compounds and be able to interpret NMR spectra.
- Apply the principles of acid-base chemistry to organic reactions.
- Apply molecular orbital theory to explain the chemical character of molecules containing conjugated and aromatic pi bonding.
- Analyze and appropriately apply major bonding theories and models to molecular structures and to predict/explain reactions.
- For the common classes (such as alcohols, ethers, aldehydes, ketones, aromatics, carboxylic acids and their derivatives) of 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.
- Apply knowledge of reaction mechanisms to predict products.
- Apply knowledge of specific reactions to synthesis problems.
- Use the Principles of Green Chemistry to evaluate chemical reactions.

### CH 243 - Organic Chemistry

6 Credit(s)

Organic chemistry for science and health science majors, with a green chemistry emphasis. Topics include carbonyl systems, nitrogen containing

organic compounds, conjugated/aromatic systems, and organic compounds of biochemical significance. Lecture and laboratory.

**Prerequisite:** Grade of C- or better in CH 242

#### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Apply the principles of acid-base chemistry to organic reactions.
- Apply molecular orbital theory to explain the chemical character of molecules containing conjugated and aromatic pi bonding.
- Analyze and appropriately apply major bonding theories and models to molecular structures and to predict/explain reactions.
- For the common classes (such as aromatics, carbonyl compounds, amines, amides, carbohydrates, lipids, amino acids, nucleic acids and proteins) of organic molecules, describe their characteristic structures, relate molecular structure to physical properties, correlate molecular structure with names, describe characteristic reaction mechanisms, state specific reactions.
- Apply knowledge of reaction mechanisms to predict products.
- Apply knowledge of specific reactions to synthesis problems.
- Apply structural knowledge to explain function of biochemical.
- Use the principles of Green Chemistry to evaluate chemical reactions.
- 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.
- Use chemical references to gather information about organic compounds.
- Apply laboratory techniques to the preparation and/or characterization of a variety of organic compounds.
- Use analytical techniques such as melting point determination and spectroscopic techniques to identify laboratory products.
- Keep a proper laboratory notebook and report experimental results using a formal report.
- Evaluate experiments both qualitatively and quantitatively for technique, results, and to analyze experimental errors.
- Use IR and NMR spectroscopy to analyze laboratory products as appropriate.

## 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:

- Pronounce Chinese phonetic symbols accurately.
- Exchange basic greetings and communicate in predicable settings with appropriate vocabulary.
- Apply basic cultural understandings and recognize cultural values when interacting with native speakers of Chinese and authentic texts.
- 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:

- Pronounce Chinese phonetic symbols accurately.
- Exchange daily greetings and communicate in semi-predicable settings with appropriate vocabulary depending on age and gender.
- Apply common cultural understandings and recognize cultural values when interacting with native speakers of Chinese.
- Use the understanding of basic Chinese syntactic system to read and compose colloquial Chinese texts in Chinese characters.
- Apply their understanding of Chinese to interact with native Chinese speakers.

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### 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:

- Exchange daily greetings and communicate with gender and age appropriate vocabulary when interact with native Chinese speakers.
- Apply common cultural understandings and recognize cultural values when interacting with native speakers of Chinese.
- 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.

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## Chinuk Wawa

### CW 101 - Chinuk Wawa

4 Credit(s)

This course is the first course of a three-term sequence of study of the American Indian language, Chinuk Wawa, at the first-year college level. Students will achieve beginning listening, oral, cultural, and literacy competency. Determination of competency and instruction will conform to tribal, state, and college criteria. Language instruction will include activities, dialogue, and text analysis. Objectives: Students will learn the sound system of Chinuk Wawa. Be able to converse in a variety of common everyday settings using vocabulary and structures presented in class. Emphasis is placed on daily speaking, writing, reading, and listening of Chinuk Wawa and learning about the cultures of the people who spoke and still speak the language.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Understand the phonetic system of a chosen American Indian language.
- Understand the interrelatedness of language and culture.
- Understand the basic grammatical structure of the language.
- Develop a broad vocabulary in the language.
- Develop basic conversational skills in the language.
- Understand the traditionally oral nature of American Indian Languages.
- Understand and meet Tribal Benchmarks for mastery of the language.

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### CW 102 - Chinuk Wawa

4 Credit(s)

This course is the second course of a three-term sequence of study of the American Indian language, Chinuk Wawa, at the first-year college level. Students will achieve beginning listening, oral, cultural, and literacy competency. Determination of competency and instruction will conform to tribal, state, and college criteria. Language instruction will include activities, dialogue, and text analysis. Objectives: Students will continue to become proficient in the sound system of Chinuk Wawa. Be able to converse in a variety of common everyday setting using basic sentences and structures presented in class. Emphasis is placed on daily speaking, writing, reading, and listening of Chinuk Wawa and learning about the cultures of the people who spoke and still speak the language.

**Prerequisite:** CW 101 or consent of instructor.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Understand the phonetic system of a chosen American Indian language.
- Understand the interrelatedness of language and culture.
- Understand the basic grammatical structure of the language.
- Develop a broad vocabulary in the language.
- Develop basic conversational skills in the language.
- Understand the traditionally oral nature of American Indian Languages.
- Understand and meet Tribal Benchmarks for mastery of the language.

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### CW 103 - Chinuk Wawa

4 Credit(s)

This course is the third course of a three-term sequence of study of the American Indian language, Chinuk Wawa, at the first-year college level. Students will achieve beginning listening, oral, cultural, and literacy competency. Determination of competency and instruction will conform to

tribal, state, and college criteria. Language instruction will include activities, dialogue, and text analysis. Objectives: Students will become proficient in the sound system of Chinuk Wawa. Be able to converse in a variety of common everyday settings using sentences, questions, and structures presented in class. Emphasis is placed on daily speaking, more complex writing, reading and listening of Chinuk Wawa and learning about the cultures of the people who spoke and still speak the language.

**Prerequisite:** CW 102 or consent of instructor.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Understand the phonetic system of a chosen American Indian language.
- Understand the interrelatedness of language and culture.
- Understand the basic grammatical structure of the language.
- Develop a broad vocabulary in the language.
- Develop basic conversational skills in the language.
- Understand the traditionally oral nature of American Indian Languages.
- Understand and meet Tribal Benchmarks for mastery of the language.

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### CW 201 - Chinuk Wawa

4 Credit(s)

This course is the first course of a three-term sequence to ensure students achieve competency in Chinuk Wawa at the second year college level. Competency is defined by benchmarks set by the Tribes, by the state of Oregon and in accordance with Oregon's SB 690 of 2001, and by Lane's language standards. Objectives: Students will learn and discuss the culture and history of the Grand Ronde and other Chinuk Wawa speaking people. Converse in a variety of common everyday settings. Learn to use more advanced verb structures: Learn to work (with a linguistic emphasis) with texts. Emphasis is placed on daily speaking, writing, reading, and listening of Chinuk Wawa and learning about the cultures of the people who spoke and still speak the language.

**Prerequisite:** CW 103 or consent of the instructor.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Use the language's sound system.
- Understand the basic grammatical structure of the language.
- Be able to use memorized words and phrases, everyday expressions, identify familiar objects, hold basic conversations using simple sentences and give short presentations in the topic areas.
- Understand the interrelatedness of language and culture.
- Students will be able to identify and describe the importance of family, traditional clothing, spiritual areas, sources of water, camping places, traditional practices related to each season, culturally relevant areas in the community, cultural health practices including plants related to healing and traditional foods.
- Students will know: songs, dances, gestures.
- Be able to recognize words, phrases, sentences, and questions about the topics.
- Be able to write words, lists, phrases, sentences and paragraphs about the topics.
- Comprehend familiar words and phrases, understand short sentences and questions, understand short conversations about and in the topics.

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### CW 202 - Chinuk Wawa

4 Credit(s)

This course is the second course of a three-term sequence to ensure students achieve competency in Chinuk Wawa at the second year college level. Competency is defined by benchmarks set by the Tribes, by the state of Oregon and in accordance with Oregon's SB 690 of 2001, and by Lane's language standards. Objectives: Students will Learn and discuss the culture and history of the Grand Ronde and other Chinuk Wawa speaking people. Converse in a variety of settings. Learn to use more advanced verb structures. Learn to work (with a linguistic emphasis) with texts. Emphasis is placed on daily speaking, writing, reading, and listening of Chinuk Wawa and understanding the cultures of the people who spoke and still speak the language.

**Prerequisite:** CW 201 or consent of the instructor.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Use the language's sound system.
- Understand the basic grammatical structure of the language.
- Be able to use memorized words and phrases, everyday expressions, identify familiar objects, hold basic conversations using simple sentences



and give short presentations in the topic areas.

- Understand the interrelatedness of language and culture. Students will be able to identify and describe the importance of family, traditional clothing, spiritual areas, sources of water, camping places, traditional practices related to each season, culturally relevant areas in the community, cultural health practices including plants related to healing and traditional foods.
- Students will know: songs, dances, gestures.
- Be able to recognize words, phrases, sentences, and questions about the topics.
- Be able to write words, lists, phrases, sentences and paragraphs about the topics.
- Comprehend familiar words and phrases, understand short sentences and questions, understand short conversations about and in the topics.

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### CW 203 - Chinuk Wawa

4 Credit(s)

This course is the third course of a three-term sequence to ensure students achieve competency in Chinuk Wawa at the second year college level. Competency is defined by benchmarks set by the Tribes, by the state of Oregon and in accordance with Oregon's SB 690 of 2001, and by Lane's language standards. Objectives: Students will learn and discuss the culture and history of the Grand Ronde and other Chinuk Wawa speaking people. Converse in a variety settings. Learn to use more advanced grammatical structures. Work (a linguistic emphasis) on texts. Emphasis is placed on daily speaking, writing, reading, and listening of Chinuk Wawa and understanding the cultures of the people who spoke and still speak the language.

**Prerequisite:** CW 202 or consent of the instructor.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Use the language's sound system.
- Understand the basic grammatical structure of the language.
- Be able to hold and add to conversations and give presentations in the topic area.
- Understand the interrelatedness of language and culture. Identify and describe the importance of family, traditional clothing, spiritual areas, sources of water, camping places, traditional practices related to each season, culturally relevant areas in the community, cultural health practices including plants related to healing and traditional foods and traditional values and how the world came to be including gender roles and responsibilities, perform traditional dances and describe traditional practices.
- Know: songs, dances, gestures.
- Be able to recognize words, phrases, sentences, and questions about the topics.
- Be able to write words, lists, phrases, sentences and paragraphs about the topics.
- Demonstrate learning through strong listening skills, and understanding conversations of a few minutes length, understanding questions, dialogues and presentations in the language.

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## Cinema Studies

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### 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:

- Develop and use a cinematic vocabulary to analyze individual film texts.
- Use a cinematic vocabulary to identify and analyze film style across texts and within and between film movements.
- Recognize and explain key figures and events of/in international

film history: e.g., the significance of national cinemas and modes of production.

- Situate cinematic texts within their historic, cultural, economic, and technological contexts.
- Describe key approaches to film history: historic, aesthetic, technological, and economic analysis.
- Use an inquiry process to develop questions pertinent to the study and analysis of film history.

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### 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:

- Develop and use a cinematic vocabulary to analyze individual film text.
- Use a cinematic vocabulary to identify and analyze film style across texts and within and between film movements.
- Recognize and explain key figures and events of/in international film history: e.g., the significance of national cinemas and modes of production.
- Situate cinematic texts within their historic, cultural, economic, and technological contexts.
- Describe key approaches to film history: historic, aesthetic, technological, and economic analysis.
- Use an inquiry process to develop questions pertinent to the study and analysis of film history.

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### 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:

- Develop and use a cinematic vocabulary to analyze individual film texts.
- Use a cinematic vocabulary to identify and analyze film style across texts and within and between film movements.
- Recognize and explain key figures and events of/in international film history, e.g., the significance of national cinemas and modes of production.
- Situate cinematic texts within their historic, cultural, economic, and technological contexts.
- Describe key approaches to film history: aesthetic, cultural, technological, and economic analysis.
- Use an inquiry process to develop questions pertinent to the study and analysis of film history.

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## College Success

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### 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. May be offered as a telecourse.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Identify the characteristics of successful and unsuccessful students.
- Specify their own individual problem areas.
- Describe successful strategies to remedy problem areas.
- Apply learned strategies to specific current academic and personal situations.
- Evaluate the effectiveness with which to apply strategies.
- Troubleshoot and make adjustments to strategies as necessary.
- Discuss how to integrate this system into other aspects of their lives.

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### 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. May be offered through Distance Learning.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Identify the characteristics of successful and unsuccessful students.
- Specify their own individual problem areas.
- Describe successful strategies to remedy problem areas.
- Apply learned strategies to specific current academic and personal situations.
- Evaluate the effectiveness with which to apply strategies.
- Troubleshoot and make adjustments to strategies as necessary.
- Discuss how to integrate this system into other aspects of their lives.

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## Communication

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### COMM 100 - Basic Communications

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. May be offered online.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Demonstrate understanding of basic communication theory in varied contexts.
- Identify and define elements of the communication process, especially elements of perception, listening, language, nonverbal communication, reasoning, and message organization.
- Describe essential skills in listening, verbal and nonverbal communication, interpersonal relationships, effective group functioning, and public speaking.
- Demonstrate understanding of behaviors and attitudes that contribute to effective communication.
- Engage in ethical communication processes that accomplish goals.
- Respond to the needs of diverse audiences and contexts.
- Build and manage relationships.

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### 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. May be offered online.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Appreciate listening as a vital element in the communication process.
- Understand the listening process.
- Evaluate your own listening behaviors.
- Demonstrate improved listening proficiency in a variety of communication contexts.
- Know strategies useful for assisting others' listening proficiency.
- Demonstrate ability to recall messages and follow oral directions.
- Demonstrate ability to listen through accents, emotional content, and noise.
- Demonstrate ability to organize, summarize, and paraphrase messages.
- Demonstrate critical thinking skills for evaluating the importance and logic of messages.
- Engage in ethical communication processes that accomplish goals.
- Respond to the needs of diverse audiences and contexts.
- Build and manage relationships.

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### 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. May be offered online.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Demonstrate basic understanding and competency in speech preparation including selecting appropriate topics, clear and specific organization, use of compelling evidence and support.
- Demonstrate the ability to create a clearly worded thesis and specific purpose statement.
- Distinguish between information and persuasion in a public speaking setting.
- Analyze and develop an argument according to rules of logic, and motivate an audience through the use of appropriate emotional appeals.
- Exhibit skills in audience analysis, critical listening and critiquing speeches.

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### 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:

- Develop public speaking and argumentation skill.
- Recognize the complexity of controversies, analyze issues and organize persuasive messages.
- Analyze audiences and adapt messages to an audience.
- Demonstrate skill in critical listening.
- Use presentation software to prepare and deliver a speech.
- Locate and evaluate online and print information and increase selectivity in research.
- Critique speeches and debates.
- Understand goals and responsibilities in formal argumentations.
- Engage in ethical communication processes that accomplish goals.
- Respond to the needs of diverse audiences and contexts.
- Build and manage relationships.

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### COMM 115 - Introduction to Intercultural Communication

4 Credit(s)

This course addresses how work, study or travel influences intercultural interactions. A variety of topics will illustrate how differing values, beliefs, attitudes, and social systems effect verbal and nonverbal human communication behaviors. Students will develop awareness, understanding, and sensitivity to cultural diversity within the personal, national and international settings. May be offered online.

## Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Define intercultural communication.
- Describe importance of intercultural communication in national/international affairs.
- Identify and describe areas of commonality as well as differences across cultures and their ethical impacts.
- Empathize with the experiences of those with diverse cultural backgrounds.
- Apply communication skills for more effective intercultural communication.
- Analyze and identify significant variables in various cultural contexts.
- Analyze intercultural communication in specific contexts (may include health care, business, or educational settings).
- Explore the ways in which conflict and conflict resolution are affected by cultural assumptions.
- Engage in ethical communication processes that accomplish goals.
- Respond to the needs of diverse audiences and contexts.
- Build and manage relationships.

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## COMM 130 - Business and Professional Communication

4 Credit(s)

Business and Professional Communication is designed to enhance students' understanding of the skills, principles, and challenges associated with business and professional communication. This course will focus on the analysis and application of communication principles and practices (resume writing and interviewing, interpersonal communication, small group and team communication, public presentations, and technological communication) for successful participation in organizational and professional activities. Oral presentations and written assignments are utilized to evaluate competencies in verbal and nonverbal communication efforts. May be offered online.

### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Recognize communication as a transactional process and identify the elements common to all communication events.
- Identify key terms and major theories relevant to specific business and professional contexts.
- Describe the unique nature of interpersonal relationships within the business and professional context.
- Identify and participate in a successful interviewing situation.
- Create a resume to enhance individual career an/or educational marketability.
- Integrate communication and research skills to create a professional presentation.
- Produce effective business and professional business writing samples.
- Communicate effectively both as a team member and as a leader.
- Be familiar with a variety of presentational aids.
- Engage in ethical communication processes that accomplish goals.
- Respond to the needs of diverse audiences and contexts.
- Build and manage relationships.

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## 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, and relationship development. May be offered online.

### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Define the concepts involved in the human communication process and identify the needs that human communication satisfies in different contexts.
- Define and identify self-concept, messages, verbal and non-verbal communication, listening and emotional expressions.
- Demonstrate understanding of the process of perception, and the role that physical, cultural, and social experience plays in interpersonal perception.
- Be able to use paraphrasing, perception checking, self-disclosure, and appropriate questions.
- Demonstrate an understanding of and appreciation for the differences and commonalities among us.

- Describe skills and behaviors to cope with self-defeating self-talk, criticism from others, and ways to appropriately give and receive compliments.
- Demonstrate self-awareness of personal strengths and weaknesses in interpersonal communication skills, interpersonal relationships and interpersonal interactions.

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## 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:

- Use communication skills that facilitate group work.
- Recognize the importance and function of small groups.
- Learn to work cooperatively and effectively in a group.
- Diagnose and correct ineffective group communication behavior.
- Make effective use of technology to communicate with group members.
- Learn effective group presentational skills.
- Engage in ethical communication processes that accomplish goals.
- Respond to the needs of diverse audiences and contexts.
- Build and manage relationships.

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## 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. May be offered online.

### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Recognize gender-stereotyped communication in a variety of contexts.
- Assess how gender roles are affected by cultural values.
- Describe gender differences in interpersonal relationships.
- Implement options for ethical verbal and nonverbal communication across gender and culture to create/support sustainable relationships.

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## 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:
- Identify why conflict is an inherent and crucial part of the human condition
- Explain the role of perception in communication and conflict
- Analyze competitive and cooperative approaches to conflict
- Distinguish the difference between supportive and defensive climates
- Apply techniques to resolve conflict

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## 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:

- Identify the concepts involved in the fundamentals of rhetoric and communication process.



- Show a practical approach to research and organize materials in a manner that supports a set of persuasive arguments.
- Understand the ethical and intellectual responsibilities associated with rhetorical engagement.
- Show an awareness of current land use/environmental issues, understand the manner in which rhetoric is employed by primary rhetors, and predict outcomes.
- Describe and analyze audience needs and behaviors associated with various environmental issues.
- Demonstrate proficiency in oral testimony, group discussion, and debate.
- Critically evaluate the persuasive tactics used by speakers and campaigns which advocate positions on environmental issues.
- Communicate in a manner that promotes community stability through sustainable use of natural resources based on ecological principles.
- Identify rhetorical elements of public messages and analyze key arguments.
- Understand the influence of digital communication on message construction and society.

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### 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. May be offered online.

#### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Explain the components of communication, mediated communication, and interpersonal communication.
- Describe the concept of media as tools.
- Understand and demonstrate information literacy in the digital age.
- Understand and explain media as educational tool.
- Examine interpersonal relationships in a digital age.
- Understand and explain the use of persuasion as it is related to mediated communication.
- Describe the ways in which advertising, campaigning, and entertainment are related to mediated communication.
- Understand and examine the uses and effects of digital entertainment.
- Create and engage in mediated communication through the use of personal blogs.

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## 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:

- Describe the roles of information technology professionals in organizations and the associated skills and knowledge required for those positions.
- Identify professional development resources available to information technology professionals.
- 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.

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### 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:

- Understand and be able to converse in basic computer terminology.

- Formulate opinions about the impact of computers on society.
- Create, format, and save word processing documents.
- Create, format and save simple spreadsheets.
- Create an overhead presentation.
- Create and enter records into a simple database.
- Use select queries to retrieve information from a database.
- Access and evaluate Internet-based information.
- Use e-mail to communicate with others.
- Be able to organize disks and files.
- Integrate software applications into their life and school work.

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### CIS 125A - Software Tools: App Development

4 Credit(s)

This course provides students with no programming background with an introduction to mobile application development. Students will use a visual drag and drop tool to build applications for Android 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.

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### 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 skills.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Describe in his/her own words the meaning and usage of relational database concepts and vocabulary.
- Use a representative relational database package to implement database tables, queries, forms and reports.
- Evaluate the appropriateness of the use of a relational database in the solution of a case problem.
- Design relational database tables, queries, forms and reports that could be used in the solution of a case problem.
- 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.

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### 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:

- Differentiate between different genres of games.
- Compare and contrast games meant for education and entertainment.
- Design computer based games.
- Create computer based games.
- Apply programming principles to game implementation.

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### CIS 126 - Game Design: Principles and Practices

4 Credit(s)

In this course, students will learn and apply game design principles in order to turn their ideas into interesting and engaging games. Students will develop and

refine these ideas through prototyping and testing throughout the course. No prior programming background is required for this course.

### Learning Outcomes

Upon successful completion of this course the student should be able to:

- Describe and discuss the steps of the game design process.
- Build a game prototype based on an initial game concept.
- Refine and improve a game concept based on user feedback.
- Compare and contrast game genres and explain the significance of genre in game design.
- Write and develop a detailed description of a game world based on an initial setting concept.

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### 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

Upon successful completion of this course the student should be able to:

- Program in a scripting language for game development.
- Work with an elementary physics engine.
- Work in a teamwork environment creating several computer games.
- Use basic computer AI techniques in creating a game.
- Develop an effective user interface.

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### 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.

### Learning Outcomes

Upon successful completion of this course the student should be able to:

- Understand basic operating system features.
- Be able to install the operating system.
- Be able to do basic system configuration.
- Be able to run applications, and do file management.
- Be able to use the graphical and command line user interfaces.
- Be able to use editors and run scripts.
- Understand file system security.

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### 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:

- Use Windows to do file management and execute applications.
- Customize and configure Windows.
- Utilize antivirus and file compression software.
- Use DOS commands to do file management and understand DOS batch files.
- Install and update Windows utilities and applications.
- Manage shared folders and permissions.
- Create and manage user accounts and groups.

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### 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. May be offered online.

**Prerequisite:** Basic computer literacy and file management.

### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Discuss the technologies and tools used in the creation of static web pages.
- Prepare web page plans and preliminary designs for content and layout based on an analysis of web site purpose, audience, and client needs.
- Implement, test, validate and debug html syntax for semantic meaning of web pages.
- Implement, test, validate and debug css syntax for styling and layout of web pages.

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### CIS 225 - Computer End-User Support

4 Credit(s)

Prepares students to support end-users in a variety of organizational settings. Topics: End-user support functions, techniques for developing/delivery training, help-desk operations, troubleshooting/problem solving, and end-user interaction. Taught in a lab environment.

**Prerequisite:** CIS 125D, and CS 179, or instructor consent.

### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Explain issues concerning the management of the end-user support function.
- Describe the typical end-user in various organization settings.
- Determine when to use certain end-user support tools and demonstrate their use.
- Describe the duties that a support specialist would perform.
- Demonstrate techniques that are effective in assisting end-users.
- Identify techniques for diagnosing hardware and software problems.
- Describe the major content areas of end-user training.
- Describe ethical and legal computing issues.
- Demonstrate techniques that are effective in developing and delivering training modules.

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### CIS 244 - Systems Analysis

4 Credit(s)

This course provides foundational principles in systems analysis and development using an object oriented approach. Topics include: requirements gathering, iterative development, documenting work-flows, domain modeling with Unified Modeling Language (UML), database, agile techniques and use cases. Current issues of communication and connectedness via end of chapter case studies will take you through many aspects of system analysis. Students will use graphical and/or drawing software for modeling diagrams.

**Prerequisite:** CIS 125D and CS 161N or CS 161C or instructor consent.

### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Manage the activities of the System Development Life Cycle (SDLC).
- Develop a project plan.
- Gather system requirements and document them using: UML diagrams, Narrative descriptions, Mock-ups, and prototypes.
- Model system requirements using traditional and object oriented approaches.
- Evaluate alternative system solutions.
- Describe the elements of system design.

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### CIS 276R - Data Integration, Analytics and Reporting

4 Credit(s)

This course covers database connectivity, data analytics, database design, and data mining and warehousing methodologies including star schemas and online analytical processing. It utilizes tools and hands-on activities to perform data integration, reporting, and data extraction and migration.

**Prerequisite:** CS 275

### Learning Outcomes

Upon successful completion of this course the student should be able to:

- Identify and utilize database design methodologies including star schemas.
- Identify and describe business intelligence and its reporting styles.
- Use selected online analytical processing (OLAP) and reporting tools.
- Utilize and describe database connectivity, database-performance tuning.
- Describe distributed database management systems and their components.

- Utilize and describe data integration, mining and analytics methodologies.
- Use and describe data migration and data warehousing methodologies.
- Maintain databases with concurrency control, recovery management, account management and security.
- Describe the Hadoop framework and NoSQL data model.

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### CIS 287 - Microcomputer Hardware

1-4 Credit(s)

Current technology of specific PC hardware components. Installation and troubleshooting of these components include memory, video display, clock speeds, microprocessor differences, disk drives, input devices, and ports. The physical connection within a network, including cabling and installation of Network Interface Cards, is introduced. Hardware troubleshooting techniques emphasized.

#### Learning Outcomes

Upon completion of this course, the successful student will be able to:

- Identify specific PC hardware components.
- Install and troubleshoot PC components.
- Understand the physical connection within the network .
- Acquire confidence in troubleshooting both hardware and network connections.

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## Computer Science

### CIS 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:

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- Demonstrate an understanding of database software by being able to create and manipulate database tables, data-entry screens, reports, and queries.
- Demonstrate an understanding of presentation software by being able to create and format simple presentations.
- 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.

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### CS 133C - Beginning Programming

4 Credit(s)

This course is an introduction to software design, development and testing. It covers basic syntax and semantics of C++, data types, and algorithm and program design. Development tools and object-oriented programming are introduced. May be offered online.

**Prerequisite:** Complete one of the following courses: CIS 125G, CS 160, MTH 095, MTH 111, MTH 112, MTH 231, MTH 241, MTH 251 (or by placement). Students must also complete CS 161N or CS 161P to enroll in this course.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Discuss the issues involved in developing large scale applications.
- Compare and contrast procedural and object oriented programming paradigms.
- Apply one and multi-dimensional arrays to solve a variety of programming problems.
- Understand how to convert from one representation to another as needed.
- Effectively use pointers and dynamically created objects. Determine when pointers should and should not be used.
- Design, implement, test, and debug C++ classes.
- Create and use C++ classes that demonstrate inheritance and polymorphism.

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### 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. May be offered online.

**Prerequisite:** MTH 060 or higher and CIS 195 - Web Authoring 1 or instructor consent.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Discuss the challenges, trends, and technologies used in web development.
- Compare and contrast popular client side web development languages and tools.
- Design, implement, test, and debug scripts that perform typical client side web processing using JavaScript.

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### CS 133N - Beginning Programming: C#

4 Credit(s)

This course is an introduction to software design, development and testing. It covers basic syntax and semantics of C#, algorithms and program design. Development tools and object-oriented programming are introduced.

**Prerequisite:** Complete one of the following: CS 160 or CIS 125A. Students must also complete CS 161C or CS 161P to enroll in this course.

#### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Develop, test and debug algorithms involving the three structured programming constructs when given a written description.
- Write, edit and compile a C# program.
- Design, implement, test and debug an introductory program written in C#.

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### CS 133P - Beginning Programming: Python

4 Credit(s)

This course is an introduction to software design, development and testing. It covers basic syntax and semantics of Python, data types, and algorithm and program design. Development tools and object-oriented programming are introduced. Will be offered online.

**Prerequisite:** CS 160 or CIS 125G or MTH 082 or MTH 095 or MTH 098 or MTH 111 or MTH 112 or MTH 231 or MTH 241 or MTH 251 or placement test. Students must also complete CS 161N or CS 161C to enroll in this course.

#### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Develop, test, and debug algorithms involving the three structured programming constructs when given a written description.
- Write algorithms in proper Python syntax.
- Write, edit and compile a Python program.
- Implement, test, and debug elementary programs written in Python.



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**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. May be offered online.

**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:

- Convert numbers from binary to decimal and perform arithmetic operations with binary numbers.
- Create simple electronic circuits with basic logic units and analyze the equivalent logical circuits.
- Deconstruct a computer system into its component parts: applications, operating system, and hardware.
- Compare and contrast alternative programming methodologies and languages.
- Decompose problems and develop algorithms to solve them.
- Describe how programming languages are implemented, including the translation process from high-level to machine-level code.
- Explain communication technologies and how they support computer networks.
- Relate how computer information systems are utilized in different social and business applications.
- Apply ethical standards to computer and internet use and situations.
- Differentiate between the disciplines of Computer Science, Electrical Engineering, Computer Engineering, Software Engineering, Information Technology and Information Systems.

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**CS 161C - Computer Science 1**

4 Credit(s)

This course is an introduction to software design, development and testing. It covers basic syntax and semantics of C++, data types, and algorithm and program design. Development tools and object-oriented programming are introduced. May be offered online.

**Prerequisite:** Complete one of the following courses: CIS 125G, CS 160, MTH 095, MTH 111, MTH 112, MTH 231, MTH 241, MTH 251 (or by placement).

**Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Discuss the issues involved in developing large scale applications.
- Compare and contrast procedural and object oriented programming paradigms.
- Apply one and multi-dimensional arrays to solve a variety of programming problems.
- Understand how to convert from one representation to another as needed.
- Effectively use pointers and dynamically created objects. Determine when pointers should and should not be used.
- Design, implement, test, and debug C++ classes.
- Create and use C++ classes that demonstrate inheritance and polymorphism.

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**CS 161N - Computer Science 1**

4 Credit(s)

This course is an introduction to software design, development and testing. It covers basic syntax and semantics of C#, algorithms and program design. Development tools and object-oriented programming are introduced.

**Prerequisite:** Complete one of the following: CIS 125A or CS 160.

**Learning Outcomes**

Upon successful completion of this course, students will be able to:

- Develop, test and debug algorithms involving the three structured programming constructs when given a written description.
- Write, edit and compile a C# program.
- Design, implement, test and debug an introductory program written in C#.

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**CS 161P - Computer Science 1**

4 Credit(s)

This course is an introduction to software design, development and testing. It covers basic syntax and semantics of Python, data types, and algorithm and program design. Development tools and object-oriented programming are introduced. Will be offered online.

**Prerequisite:** Choose one of the following courses, which must be completed with a B- or better: CIS 125G, CS 160, CS 161C, MTH 095, MTH 098, MTH 111, MTH 112, MTH 231, MTH 241, MTH 251 (or by placement).

**Learning Outcomes**

The student will be able to:

- Develop, test, and debug algorithms involving the three structured programming constructs when given a written description.
- Write algorithms in proper Python syntax.
- Write, edit and compile a Python program.
- Implement, test, and debug elementary programs written in Python.

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**CS 162C - Computer Science 2**

4 Credit(s)

This course is a continuation of Beginning C++ programming. Topics covered include more advanced Object-Oriented programming concepts, searching and sorting, linear data structures, stream and file I/O, recursion, exception handling, and graphical user interface programming. May be offered online.

**Prerequisite:** MTH 082 or CS 161C or instructor consent.

**Learning Outcomes**

Upon successful completion of this course the student should be able to:

- Discuss the issues involved in developing large scale applications.
- Compare and contrast procedural and object oriented programming paradigms.
- Use 1-D and 2-D arrays.
- Effectively use pointers and dynamically created objects.
- Design, implement, test, and debug C++ classes.
- Create and use C++ classes that demonstrate inheritance and polymorphism.
- Use of a graphics library.

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**CS 162N - Computer Science 2**

4 Credit(s)

This course is a continuation of CS 161N. Topics covered include more advanced Object-Oriented programming concepts, searching and sorting, linear data structures, stream and file I/O, recursion and exception handling.

**Prerequisite:** CS 161N or CS 133N

**Learning Outcomes**

Upon successful completion of this course, students will be able to:

- Compare and contrast procedural and object-oriented programming paradigms.
- Apply one and multi-dimensional arrays to solve a variety of programming problems.
- Design, implement, test and debug C# classes. Create and use C# classes that demonstrated inheritance and polymorphism.
- Design, implement, test and debug intermediate level object-oriented programs in C#.

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**CS 162P - Computer Science 2**

4 Credit(s)

This course is a continuation of CS 161P. Topics covered include more advanced Object-Oriented programming concepts, searching and sorting, linear data structures, stream and file I/O, recursion, and exception handling. May be offered online.

**Prerequisite:** CS 161P or CS 161C or CS 133P or instructor consent.

**Learning Outcomes**

The student will be able to:

- Discuss the issues involved in developing large scale applications.
- Compare and contrast procedural and object oriented programming paradigms.
- Apply one and multi-dimensional arrays to solve a variety of programming problems. Understand how to convert from one representation to another as needed.
- Effectively use pointers and dynamically created objects. Determine when pointers should and should not be used.
- Design, implement, test, and debug Python classes.
- Create and use Python classes that demonstrate inheritance and polymorphism.

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**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

Upon successful completion of this course, the student should be able to:

- Explain network technologies.
- Explain how devices access local and remote network resources.
- Describe router hardware.
- Explain how switching operates in a small to medium-sized business network.
- Design an IP addressing scheme to provide network connectivity for a small to medium-sized business network.
- Configure initial settings on a network device.
- Implement basic network connectivity between devices.
- Configure monitoring tools available for small to medium-sized business networks.

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#### 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.

#### Learning Outcomes

Upon successful completion of this course, the students will be able to:

- Discuss evolution and fundamental concepts of cybersecurity.
- Explain the fundamentals of the cybersecurity profession, including common bodies of knowledge and skillsets.
- 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.

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#### 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, he/she 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

Upon successful completion of this course, the student should be able to:

- Identify the advantages and disadvantages of wireless networking.
- Know the hardware components used in wireless networks.
- Install and configure the basic hardware components used in wireless networks.
- Know the fundamentals of radio wave data communication.
- Know the industry standards associated with wireless networking.
- Know wireless security principles and be able to identify network vulnerabilities.
- Implement wireless security protections.
- Monitor and troubleshoot wireless connections.

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#### 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

#### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Determine how a router will forward traffic based on the contents of a routing table.
- Demonstrate how switching operates in a small to medium-sized business network.
- Use monitoring tools and network management protocols to troubleshoot data networks.

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#### CS 233C - Intermediate Programming

4 Credit(s)

This course is a continuation of Beginning C++ programming. Topics covered include more advanced Object-Oriented programming concepts, searching and sorting, linear data structures, stream and file I/O, recursion, exception handling, and graphical user interface programming. May be offered online.

**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 the student should be able to:

- Discuss the issues involved in developing large scale applications.
- Compare and contrast procedural and object oriented programming paradigms.
- Use 1-D and 2-D arrays.
- Effectively use pointers and dynamically created objects.
- Design, implement, test, and debug C++ classes.
- Create and use C++ classes that demonstrate inheritance and polymorphism.
- Use of a graphics library.

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#### 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 and (CS 162N or CS 233N) with a grade of B- or better.

#### Learning Outcomes

Upon successful completion of this course the student should be able to:

- Use modern JavaScript constructs and tools to design, implement, test and debug front-end browser based applications.
- Use a modern JavaScript framework to design, implement, test and debug front-end browser based applications.
- Give and receive feedback orally and in writing.

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#### CS 233N - Intermediate Programming C#

4 Credit(s)

Topics covered include more advanced Object-Oriented programming concepts, searching and sorting, linear data structures, stream and file I/O, recursion and exception handling.

**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:

- Compare and contrast procedural and object-oriented programming paradigms.
- Apply one and multi-dimensional arrays to solve a variety of programming problems.
- Design, implement, test and debug C# classes. Create and use C# classes that demonstrated inheritance and polymorphism.
- Design, implement, test and debug intermediate level object-oriented programs in C#.

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#### CS 233P - Intermediate Programming: Python

4 Credit(s)

This course is a continuation of CS 133P. Topics covered include more advanced Object-Oriented programming concepts, searching and sorting, linear data structures, stream and file I/O, recursion, and exception handling. May be offered online.

**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, the student will:

- Discuss the issues involved in developing large scale applications.
- Compare and contrast procedural and object oriented programming paradigms.
- Apply one and multi-dimensional arrays to solve a variety of programming problems.
- Understand how to convert from one representation to another as needed.
- Effectively use pointers and dynamically created objects. Determine when pointers should and should not be used.

- Design, implement, test, and debug Python classes.
- Create and use Python classes that demonstrate inheritance and polymorphism.

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### 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

Upon successful completion of this course, the student will be able to:

- Design, implement, test and debug systems of classes in Python.
- Design, implement, test and debug intermediate level object oriented programs in Python.
- Design, implement, test and debug multi-form applications in Python.
- Design, implement, test and debug data driven applications in Python.
- Describe programming concepts, themes and issues orally and in writing.

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### 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 for a grade of B- or better, or instructor consent

#### Learning Outcomes

Upon successful completion of this course the student should be able to:

- Design, implement, test and debug systems of classes in C#.
- Design, implement, test and debug advanced level object oriented programs in C#.
- Design, implement, test and debug multi-form applications in C#.
- Design, implement, test and debug data driven applications in C#.
- Describe programming concepts, themes and issues orally and in writing.

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### CS 235AM - Intermediate Mobile Application Development: Android

4 Credit(s)

This course introduces students to applying object oriented programming to mobile application development and the Android System Development Kit. Cross-platform mobile app development will be done using the Mono framework and the MonoDevelop IDE. May be offered online.

**Prerequisite:** CS 162N or CS 162P or CS 162C

#### Learning Outcomes

Upon successful completion of this course the student should be able to:

- Design the core logic for a mobile software application that will run on Android.
- Write, debug, and test the code for the core logic for an application that will run on Android.
- Design User Interfaces for two platforms on Android.
- Integrate the UIs with the core logic on two platforms on Android.
- Evaluate mobile app designs and architectures in terms of user experience, performance, and maintainability.

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### CS 235IM - Intermediate Mobile Applications Development: IOS

4 Credit(s)

This course introduces students to the application of object oriented programming to mobile application development for devices running IOS.

**Prerequisite:** CS 162N or CS 162C or CS 162P

#### Learning Outcomes

Upon successful completion of this course the student should be able to:

- Design the core logic for a mobile software application that will run on IOS
- Write, debug, and test the code for the core logic for an application that will run on IOS.
- Design User Interfaces for two platforms for IOS.
- Integrate the UIs with the core logic on two platforms on IOS.
- Evaluate mobile app designs and architectures in terms of user experience, performance, and maintainability.

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### 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

Upon successful completion of this course, the student should be able to:

- Understand the installation process for a major computer operating system
- Configure user accounts and groups.
- Setup network printing.
- Understand how to install, configure, and share end-user applications including Web 2.0.
- Configure network services, such as file services, DHCP, DNS, and Web services.
- Configure interoperation with other network operating systems.
- Understand and configure operating system security.

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### 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. May be offered online.

**Prerequisite:** CIS 140W or CS 179 or instructor consent.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Install, update, and configure Windows Server.
- Install and manage Active Directory Services.
- Create and manage user accounts and groups.
- Manage shared folders and permissions.
- Manage network printing.
- Manage disk storage and disk partitions.
- Manage network services including DHCP and web services.
- Manage group policy objects.
- Monitor server performance and network traffic.

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### 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 CIS 135G or CS 295N

#### Learning Outcomes

Upon successful completion of this course the student should be able to:

- Explain what is meant by software engineering and why it is valued.
- Discuss the differences between peer-to-peer and server based version control systems and give an example of each.
- Demonstrate the use of an issue tracking system.
- Explain the advantages and disadvantages of waterfall and agile development paradigms.
- Create effective system design documentation.

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### 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 and MTH 111 or MTH 112 or MTH 231 or MTH 241 or MTH 251 or instructor consent.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Define and implement data structures including stacks, queues, linked lists, trees, hash tables, and graphs.
- Program recursively and define how recursion works.
- Measure and analyze algorithms for efficiency considerations.



- Define and implement multiple search and sort algorithms.
- Select the appropriate data structure and algorithm for a given problem.

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### 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

Upon successful completion of this course the student should be able to:

- Discuss evolution and fundamental concepts of cloud computing.
- Interpret characteristics of cloud computing and how they apply to traditional computing.
- Explain cloud types and technical perspectives.
- Apply knowledge of cloud computing to planning and implementation.
- Interpret cloud computing standards and risks as well as consequences of Cloud computing.
- Evaluate technical challenges and risks for cloud computing and understand mitigation methods.

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### 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 or SQL Server database throughout this course (based on student preference), students work with the ANSI/ISO standard with the SQL implementation of the database product.

**Prerequisite:** CS 161N or CS 161C instructor consent.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- 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.
- Write, test and debug SQL code based on ANSI/ISO standards to update database content and handle transactions.
- Write, test and debug SQL code based on ANSI/ISO standards to build and maintain database structures including views, users and permissions.
- Describe different aspects of the data they are accessing-what are their results and could they be interpreted differently.

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### CS 276 - Database System 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

Upon successful completion of this course, students will be able to:

- Identify and explain current data base models and their underlying advantages and disadvantages.
- Design a moderately complex database structure using Entity-Relationship diagrams.
- Use Normalization techniques to verify a database design.
- Create database tables, and insert and update data into the tables using advanced SOL.
- Identify and describe issues and performance bottlenecks concerning enterprise-level processing by a Database Management System.

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### 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 MTH 065 or higher.

#### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Configure and troubleshoot routers and switches.
- Resolve common issues with OSPF, EIGRP, and STP in both IPv4 and IPv6 networks.
- Implement a WLAN in a small-to-medium network.

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### 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. May be offered online.

**Prerequisite:** MTH 082 or higher or instructor consent.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Identify and configure authentication and access control properties.
- Identify and counterattack attacks.
- Harden the software and network devices and be able to secure the media and physical access.
- Identify and harden web page, e-mail, File Transfer Protocol, Directory Services, and wireless network vulnerabilities.
- Understand and implement various security techniques using keys and digital certificates.
- Identify and implement adequate security policies and procedures.

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### 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

Upon successful completion of this course, the student should be able to:

- Learn basic incident analysis and methods, using industry standard tools.
- Explain basic event correlation, normalization, and metrics of event data.
- Describe common attack vectors against networks and hosts.
- Understand SOC workflow management system and automation.
- Interpret log data to identify malicious activity on Windows and Linux hosts.
- Using security monitoring techniques, apply the processes of identifying sources and types of data and events.

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### 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

Upon successful completion of this course, the student should be able to:

- Discuss the purpose and objectives of firewalls and VPNs.
- Discuss the types of firewalls and VPNs.
- Discuss issues involved in implementing firewalls and VPNs.
- Translate the company policy into firewall and VPN policies.
- Install and configure multiple firewalls and VPNs.
- Test firewall and VPN rules and read associated log files.
- Compare baseline and post resolution vulnerability reports.
- Install and utilize various industry accepted tools.

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### 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, or instructor consent.

### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Learn the steps in the network troubleshooting process.
- Understand SNMP and how it is used to monitor the network.
- Configure servers, routers, and switches for SNMP.
- Understand packet analysis and how it is used to monitor network traffic and troubleshoot network problems.
- Learn to use an enterprise network monitoring package to monitor performance and find network problems.
- Learn to troubleshoot network problems (both hardware and software) using network test devices and troubleshooting commands and utilities.
- Learn proactive management techniques and planning for growth.
- Learn how to configure event handlers and notifications/alerts triggered by network problems.
- Learn how to create and use performance baselines and the characteristics of a slow network.
- Learn how to use performance and error logs.
- Learn how to discover network connectivity problems.
- Learn how to track network resources such as processor load, disk utilization, and memory usage.
- Learn how to create and use important configuration management documentation.
- Learn techniques for optimizing performance through caching, for example, setting up a proxy server.
- 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.

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### 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

Upon successful completion of this course, students will be able to:

- Configure and troubleshoot network devices.
- Resolve common issues with data link protocols.
- Resolve common issues with OSPF, EIGRP, and STP in both IPv4 and IPv6 networks.
- 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

### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Discuss evolution and fundamental concepts of network security.
- Explain tools, techniques and procedures commonly used by a cyber attacker.
- Apply knowledge of ethical hacking techniques to better understand common vulnerabilities and weaknesses.
- Interpret common techniques of an attacker and determine solutions to counteract an attack.
- Evaluate technical challenges and risks to external network systems and understand mitigation method.

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### 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 162N or CS 233N for a grade of B- or better, or instructor consent

**Prerequisite/Corequisite:**

**Corequisite:** CS 234N

### Learning Outcomes

Upon successful completion of this course, the student should 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.

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### CS 295P - Web Development 1: PHP

4 Credit(s)

This course provides students who have working knowledge of HTML and client-side JavaScript with an introduction to server-side web programming using PHP. Students will begin to develop the concepts and skills necessary to develop dynamic, data driven web sites. May be offered online.

**Prerequisite:** CS 133JS or instructor consent.

### Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Discuss the challenges, trends and technologies used in web development.
2. Compare and contrast popular server side web development languages and tools.
3. Design, implement, test and debug scripts that perform typical server side processing in PHP.
4. Describe programming concepts, themes and issues orally and in writing.

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### 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

Upon successful completion of this course, the student should 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.

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### CS 296P - Web Development 2: PHP

4 Credit(s)

This is the second course in the (server-side) PHP Web Development sequence. It provides students who have working knowledge of server-side web programming with the concepts and skills necessary to develop dynamic, data driven, object oriented web-based applications.

**Prerequisite:** CS 295P or instructor consent.

### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Compare and contrast popular server side web development languages and tools.
- Design and implement a MySQL database to support a web based application.
- Design, implement, test and debug data driven web based applications written in PHP.
- Describe programming concepts, themes and issues orally and in writing.

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### 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

Upon completion of this course the student will be able to:

- Analyze, design and implement a small scale, but significant programming project.
- Demonstrate an ability to integrate knowledge and skills acquired in previous coursework.
- Demonstrate the ability to work as an effective member of a project team.
- Research, analyze and describe the current state of the state and regional job markets.
- Participate in self-evaluation of work skill strengths.
- Prepare an effective cover letter and resume for an employment application.
- Through mock interviews, demonstrate an ability to respond to typical general and scenario questions.
- Develop a plan for professional growth.

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## 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 should be able to:

- Measure quantities of building materials from plans.
- Learn to interpret construction details from plans.
- Understand the basic scope of commercial construction.
- Learn a variety of standards by comparing residential building plans with commercial building plans.
- Introduction to architectural sketches and material specifications for a residence.

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### 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:

- Describe vocational, technical, and professional opportunities in the construction field.
- Describe construction job titles and their descriptions and expected wages or salaries.
- Understand basic concepts in construction organizations, labor/management problems, and the environmental influence affecting construction practices.
- Discuss new methods and materials used in local construction industry.

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### 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, the student should be able to:

- Display, to the instructor's satisfaction, an adequate understanding of the function of material and cost estimating in construction planning and management.

- 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.
- Organize cost estimate work in such a manner that no information is overlooked, and all steps can be easily retraced as judged by the instructor.
- Prepare cost estimates to within 95% accuracy of actual cost or the instructor's estimate.

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### 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:

- Demonstrate knowledge of current construction practices.
- Demonstrate knowledge of fundamental carpentry skills.
- Demonstrate knowledge/skills in material selection.
- Describe duties of the sub-contractor.
- Describe the economic importance of the shelter industry.
- Demonstrate preparedness for job opportunities.
- Apply appropriate industry safety practices.

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### 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:

- Demonstrate knowledge of current construction practices.
- Demonstrate knowledge of fundamental carpentry skills.
- Demonstrate knowledge/skills in material selection.
- Describe duties of the sub-contractor.
- Describe the economic importance of the shelter industry.
- Demonstrate preparedness for job opportunities.
- Apply appropriate industry safety practices.

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### 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:

- Demonstrate knowledge of current construction practices.
- Demonstrate knowledge of fundamental carpentry skills.



- Demonstrate knowledge/skills in material selection.
- Describe duties of the sub-contractor.
- Describe the economic importance of the shelter industry.
- Demonstrate preparedness for job opportunities.
- Apply appropriate industry safety practices.

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### **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:

- Demonstrate knowledge of current construction practices.
- Demonstrate knowledge of fundamental carpentry skills.
- Demonstrate knowledge/skills in material selection.
- Describe duties of the sub-contractor.
- Describe the economic importance of the shelter industry.
- Demonstrate preparedness for job opportunities.
- Apply appropriate industry safety practices.

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### **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:

- 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.
- 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.
- Construct a building line layout using surveying equipment and the batter-board method from a prescribed blueprint to 1/4 accuracy.

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### **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:

- Specify the standards of one and two family dwelling construction.
- Establish the philosophy, administration, jurisdiction and enforcement of codes uniformly for the health and safety of people who inhabit dwelling structures.

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### **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:

- Demonstrate a basic understanding of Sustainability and Green building.
- Understand the concepts and best practices associated with the site and land use in the building process.

- Explore the importance of water quality and conservation both inside and outside the building.
- 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.
- Explore the role that materials selection and use plays in green building and examines how to identify, select and procure green materials.
- Explore how green building construction, maintenance and renovation can result in improved indoor environmental quality (IEQ).

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### **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 should be able to:

- Measure quantities of building materials from plans.
- Interpret construction details from plans.
- Demonstrate knowledge of commercial construction scope.
- Learn a variety of standards by comparing residential building plans with commercial building plans.
- Prepare architectural sketches and material specifications for a residence.

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## **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:

- Integrate classroom learning with field experience
- Describe their work experience in their career field and growth in knowledge of the career field
- Demonstrate and explain advanced skills and knowledge gained at the workplace
- Demonstrate foundational job search and workplace competencies
- Describe understanding of workplace culture
- Demonstrate college core learning outcomes in communication and use of technology

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### **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.

#### **Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Integrate classroom learning with field experience.
- Describe their work experience in their career field and growth in knowledge of the career field.
- Demonstrate and explain advanced skills and knowledge gained at the workplace.
- Demonstrate foundational job search and workplace competencies.
- Describe understanding of workplace culture.
- Demonstrate college core learning outcomes in communication and use of technology.

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### **ART 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:

- Integrate classroom learning with field experience.
- Describe their work experience in their career field and growth in knowledge of the career field.
- Demonstrate and explain advanced skills and knowledge gained at the workplace.
- Demonstrate foundational job search and workplace competencies.
- Describe understanding of workplace culture.
- Demonstrate college core learning outcomes in communication and use of technology.

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**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:

- Integrate classroom learning with field experience.
- Describe their work experience in their career field and growth in knowledge of the career field.
- Demonstrate and explain advanced skills and knowledge gained at the workplace.
- Demonstrate foundational job search and workplace competencies.
- Describe understanding of workplace culture.
- Demonstrate college core learning outcomes in communication and use of technology.

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**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:

- Integrate classroom learning with field experience.
- Describe their work experience in their career field and growth in knowledge of the career field.
- Demonstrate and explain advanced skills and knowledge gained at the workplace.
- Demonstrate foundational job search and workplace competencies.
- Describe understanding of workplace culture.
- Demonstrate college core learning outcomes in communication and use of technology.

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**BA 280AA - Co-op Ed: Administrative Professional**

3-12 Credit(s)

**Prerequisite:** BT 206. 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:

- Integrate classroom learning with field experience
- Describe their work experience in their career field and growth in knowledge of the career field
- Demonstrate and explain advanced skills and knowledge gained at the workplace
- Demonstrate foundational job search and workplace competencies
- Describe understanding of workplace culture
- Demonstrate college core learning outcomes in communication and use of technology

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**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:

- Integrate classroom learning with field experience.
- Describe their work experience in their career field and growth in knowledge of the career field.
- Demonstrate and explain advanced skills and knowledge gained at the workplace.
- Demonstrate foundational job search and workplace competencies.
- Describe understanding of workplace culture.
- Demonstrate college core learning outcomes in communication and use of technology.

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**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:

- Integrate classroom learning with field experience.
- Describe their work experience in their career field and growth in knowledge of the career field.
- Demonstrate and explain advanced skills and knowledge gained at the workplace.
- Demonstrate foundational job search and workplace competencies.
- Describe understanding of workplace culture 6. Demonstrate college core learning outcomes in communication and use of technology.

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**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:

- 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.
- 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.
- 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.

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**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.

**Prerequisite:** CA majors only.

**Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Integrate classroom learning with field experience.
- Gain work experience in the student's career field.

- Be exposed to advanced skills and knowledge.
- Develop foundation workplace competencies.
- Be exposed to job opportunities and potentials; clarify and confirm career goals.
- Increase understanding of workplace culture.

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### **CE 280MR - Co-op Ed: Medical Receptionist (Continuing Ed)**

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:

- Integrate classroom learning with field experience.
- Describe their work experience in their career field and growth in knowledge of the career field.
- Demonstrate and explain advanced skills and knowledge gained at the workplace.
- Demonstrate foundational job search and workplace competencies.
- Describe understanding of workplace culture.
- Demonstrate college core learning outcomes in communication and use of technology.

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### **CE 280PB - Co-op Ed: Phlebotomy (Continuing Ed)**

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:

- Integrate classroom learning with field experience.
- Describe their work experience in their career field and growth in knowledge of the career field.
- Demonstrate and explain advanced skills and knowledge gained at the workplace.
- Demonstrate foundational job search and workplace competencies.
- Describe understanding of workplace culture.
- Demonstrate college core learning outcomes in communication and use of technology.

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### **CE 280RX - Co-op Ed: Pharmacy Tech (Continuing Ed)**

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:

- Integrate classroom learning with field experience.
- Describe their work experience in their career field and growth in knowledge of the career field.
- Demonstrate and explain advanced skills and knowledge gained at the workplace.
- Demonstrate foundational job search and workplace competencies.
- Describe understanding of workplace culture.
- Demonstrate college core learning outcomes in communication and use of technology.

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### **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:

- Integrate classroom learning with field experience.

- Describe their work experience in their career field and growth in knowledge of the career field.
- Demonstrate and explain advanced skills and knowledge gained at the workplace.
- Demonstrate foundational job search and workplace competencies.
- 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 and CJA 110 or instructor permission.

#### **Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Integrate classroom learning with field experience.
- Describe their work experience in their career field and growth in knowledge of the career field.
- Demonstrate and explain advanced skills and knowledge gained at the workplace.
- Demonstrate foundational job search and workplace competencies.
- Describe understanding of workplace culture.
- Demonstrate college core learning outcomes in communication and use of technology.

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### **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:

- Communicate orally and in writing using proper and current business etiquette, format and content.
- Develop an understanding of and be able to effectively communicate business skills and abilities, orally and in writing.
- Develop foundational workplace competencies and workplace culture.
- Critically think in relation to job search and on-the-job performance practices and topics.

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### **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**

Upon successful completion of this course, the student should be able to:

- Integrate classroom learning with field experience.
- Describe their work experience in their career field and growth in knowledge of the career field.
- Demonstrate and explain advanced skills and knowledge gained at the workplace.
- Demonstrate foundational job search and workplace competencies.
- Describe understanding of workplace culture.
- Demonstrate college core learning outcomes in communication and use of technology.

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### **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. WR 121-readiness (score of at least 96 on the sentence-skills placement test) recommended. See [lanec.edu/honors](http://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.

#### **Learning Outcomes**

Upon successful completion of this course, students should be able to:

- Articulate their understanding of social issues and responsibilities, multiculturalism, organizational culture, leadership styles, and sustainability.
- Observe, investigate, document and reflect upon social issues and responsibilities, multiculturalism, organizational culture, leadership styles and sustainability in a community setting.
- Demonstrate foundational workplace competencies such as reliability, responsibility, following instructions, team-work, communication skills and taking appropriate initiative.
- Articulate careers and employment related to social service.

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#### **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:

- 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.
- 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.
- 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.

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#### **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:

- Integrate classroom learning with field experience.
- Describe their work experience in their career field and growth in knowledge of the career field.
- Demonstrate and explain advanced skills and knowledge gained at the workplace.
- Demonstrate foundational job search and workplace competencies.
- Describe understanding of workplace culture.
- Demonstrate college core learning outcomes in communication and use of technology.

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#### **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:

- Integrate classroom learning with field experience.
- Describe their work experience in their career field and growth in knowledge of the career field.

- Demonstrate and explain advanced skills and knowledge gained at the workplace.
- Demonstrate foundational job search and workplace competencies.
- Describe understanding of workplace culture.
- Demonstrate college core learning outcomes in communication and use of technology.

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#### **CS 280HI - Co-op Ed: Health Informatics**

3-12 Credit(s)

This internship course offers a work experience that integrates theory and practice in the field of health informatics. 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:

- Integrate classroom learning with field experience.
- Describe their work experience in their career field and growth in knowledge of the career field.
- Demonstrate and explain advanced skills and knowledge gained at the workplace.
- Demonstrate foundational job search and workplace competencies.
- Describe understanding of workplace culture.
- Demonstrate college core learning outcomes in communication and use of technology.

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#### **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.

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#### **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.
- Describe their work experience in their career field and growth in knowledge of the career field.
- Demonstrate and explain advanced skills and knowledge gained at the workplace.
  - Demonstrate foundational job search and workplace competencies.
  - Describe understanding of workplace culture.
  - Demonstrate college core learning outcomes in communication and use of technology.

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#### **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:

- Integrate classroom learning with field experience.
- Describe their work experience in their career field and growth in knowledge of the career field .
- Demonstrate and explain advanced skills and knowledge gained at the workplace.
- Demonstrate foundational job search and workplace competencies.
- Describe understanding of workplace culture.
- Demonstrate college core learning outcomes in communication and use of technology.

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#### **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:

- Demonstrate an understanding of workplace culture including required dress, conversations, and attitudes.
- Compose in writing a useful resume, cover letter and thank you letter.
- Participate in a “mock interview” process to gain interviewing skills.
- Demonstrate the ability to analyze new situations and respond according to professionally accepted guidelines.
- Identify factors which control and contribute to success in the workplace of the dental assistant.
- Demonstrate an understanding of effective, professional interactions, including what constitutes harassment and unethical behavior.
- Actively and constructively participate in classroom discussions.

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#### DA 280 - Co-op Ed: Dental Assisting

6-12 Credit(s)

Must be enrolled in the Dental Assisting Program. 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:

- Integrate academic theory with workplace practice.
- Demonstrate a clear understanding of the responsibilities and procedures performed by each member of the dental health team.
- Compose in writing a useful resume, cover letter and thank you letter.
- Participate in a “mock interview” process to gain interviewing skills.
- Demonstrate the ability to analyze new situations and respond according to professionally accepted guidelines – criterion included in the co-op packet evals.
- Actively and constructively participate in classroom discussions.
- 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.
- Demonstrate the chairside and laboratory skills necessary to function as a member of the dental health team in two different dental offices.
- Demonstrate ability to manipulate new dental materials while maintaining efficiency.
- Demonstrate an understanding of workplace culture including required dress, conversations, and attitudes.
- Develop a professional network.
- 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.
- Demonstrate and strengthen the interpersonal skills necessary to blend into two different dental office assignments, and the clinic at LCC.
- Identify factors which control and contribute to success in the workplace of the dental assistant.
- Show personal, professional and academic integrity while working as a Cooperative Education student.

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#### 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:

- Integrate classroom learning with field experience.
- Describe their work experience in their career field and growth in knowledge of the career field.
- Demonstrate and explain advanced skills and knowledge gained at the workplace.
- Demonstrate foundational job search and workplace competencies.
- Describe understanding of workplace culture.

- Demonstrate college core learning outcomes in communication and use of technology.

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#### 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:

- Integrate classroom learning with field experience.
- Describe their work experience in their career field and growth in knowledge of the career field.
- Demonstrate and explain advanced skills and knowledge gained at the workplace.
- Demonstrate foundational job search and workplace competencies.
- Describe understanding of workplace culture.
- Demonstrate college core learning outcomes in communication and use of technology.

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#### 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:

- Learn to organize a classroom environment.
- Design curriculum.
- Interact with parents, teachers, and staff, and to teach.
- Become more confident and more skilled with each practicum you complete.
- Connect with teachers and principals.
- Build a network of support for your future career.

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#### 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:

- Integrate classroom learning with field experience.
- Gain work experience in the student's career field.
- Be exposed to advanced skills and knowledge.
- Develop foundation workplace competencies.
- Be exposed to job opportunities and potentials; clarify and confirm career goals.
- Increase understanding of workplace culture.

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#### 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.

#### Learning Outcomes

Upon completion of this course, the successful student will be able to:

- Understand and demonstrate professional appearance.
- Understand the importance of accepting constructive feedback.
- Understand and demonstrate proper attitude toward EMS work.
- Demonstrate knowledge of agency policies and procedures.
- Demonstrate knowledge of State/County EMS rules and regulations, CME requirements.
- Demonstrate knowledge of basic life support protocols.
- Demonstrate knowledge of advanced life support protocols.
- Demonstrate proper equipment use.

- Demonstrate proper response to calls.
- Demonstrate accuracy & completeness in routine forms.&nbsp;
- Demonstrate proper EMS run report writing: organization & completeness.
- Demonstrate proper EMS run reports: grammar, spelling, legibility.
- Demonstrate proper EMS run reports: completed in timely manner.
- Demonstrate proper HEAR system reports.
- Demonstrate proper scene management: normal conditions.
- Demonstrate proper scene management: stressful conditions.
- Obtain appropriate patient history.
- Perform complete physical examinations.
- Demonstrate the ability to determine a differential diagnosis appropriate to history & physical exam.&nbsp;
- Demonstrate problem solving and decision making.

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### 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.

#### Learning Outcomes

Upon completion of this course, the successful student will be able to:

- Understand and demonstrate professional appearance.
- Understand the importance of accepting constructive feedback.
- Understand and demonstrate proper attitude toward EMS work.
- Demonstrate knowledge of agency policies and procedures.
- Demonstrate knowledge of State/County EMS rules and regulations, CME requirements.
- Demonstrate knowledge of basic life support protocols.
- Demonstrate knowledge of advanced life support protocols.
- Demonstrate proper equipment use.
- Demonstrate proper response to calls.
- Demonstrate accuracy & completeness in routine forms.&nbsp;
- Demonstrate proper EMS run report writing: organization & completeness.&nbsp;
- Demonstrate proper EMS run reports: grammar, spelling, legibility.
- Demonstrate proper EMS run reports: completed in timely manner.
- Demonstrate proper HEAR system reports.
- Demonstrate proper scene management: normal conditions.
- Demonstrate proper scene management: stressful conditions.
- Obtain appropriate patient history.
- Perform complete physical examinations.
- Demonstrate the ability to determine a differential diagnosis appropriate to history & physical exam.&nbsp;
- Demonstrate problem solving and decision making.

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### 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:

- Integrate classroom learning with field experience.
- Describe their work experience in their career field and growth in knowledge of the career field.
- Demonstrate and explain advanced skills and knowledge gained at the workplace.
- Demonstrate foundational job search and workplace competencies.
- Describe understanding of workplace culture.
- Demonstrate college core learning outcomes in communication and use of technology.

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### 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:

- Integrate classroom learning with field experience.
- Describe their work experience in their career field and growth in knowledge of the career field.
- Demonstrate and explain advanced skills and knowledge gained at the workplace.
- Demonstrate foundational job search and workplace competencies.
- Describe understanding of workplace culture.
- Demonstrate college core learning outcomes in communication and use of technology.

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### 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:

- Integrate classroom learning with field experience.
- Describe their work experience in their career field and growth in knowledge of the career field.
- Demonstrate and explain advanced skills and knowledge gained at the workplace.
- Demonstrate foundational job search and workplace competencies.
- Describe understanding of workplace culture.
- Demonstrate college core learning outcomes in communication and use of technology.

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### 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:

- Integrate classroom learning with field experience.
- Describe their work experience in their career field and growth in knowledge of the career field.
- Demonstrate and explain advanced skills and knowledge gained at the workplace.
- Demonstrate foundational job search and workplace competencies.
- Describe understanding of workplace culture.
- Demonstrate college core learning outcomes in communication and use of technology.

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### 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](http://ie3global.org).

**Prerequisite:** Instructor approval.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Integrate classroom learning with field experience
- Describe their work experience in their career field and growth in knowledge of the career field
- Demonstrate and explain advanced skills and knowledge gained at the workplace
- Demonstrate foundational job search and workplace competencies
- Describe understanding of workplace culture
- Demonstrate college core learning outcomes in communication and use of technology



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**FT 280 - Co-op Ed: Flight Tech**

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**

Upon successful completion of this course, the student should be able to:

- Integrate classroom learning with field experience
- Describe their work experience in their career field and growth in knowledge of the career field
- Demonstrate and explain advanced skills and knowledge gained at the workplace
- Demonstrate foundational job search and workplace competencies
- Describe understanding of workplace culture
- Demonstrate college core learning outcomes in communication and use of technology

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**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:

- Integrate classroom learning with field experience
- Describe their work experience in their career field and growth in knowledge of the career field
- Demonstrate and explain advanced skills and knowledge gained at the workplace
- Demonstrate foundational job search and workplace competencies
- Describe understanding of workplace culture
- Demonstrate college core learning outcomes in communication and use of technology

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**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:

- Integrate classroom learning with field experience
- Describe their work experience in their career field and growth in knowledge of the career field
- Demonstrate and explain advanced skills and knowledge gained at the workplace
- Demonstrate foundational job search and workplace competencies
- Describe understanding of workplace culture
- Demonstrate college core learning outcomes in communication and use of technology

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**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:

- Integrate classroom learning with field experience
- Describe their work experience in their career field and growth in knowledge of the career field
- Demonstrate and explain advanced skills and knowledge gained at the workplace
- Demonstrate foundational job search and workplace competencies
- Describe understanding of workplace culture
- Demonstrate college core learning outcomes in communication and use of technology

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**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:

- Describe the skills and abilities gained through their work experience.
- Demonstrate foundational workplace competencies such as team work, reliability, responsibility, following instructions, taking initiative, and responding to supervision.
- Describe understanding of career opportunities gained through work experience.
- Demonstrate understanding of workplace culture through appropriate attire, behavior and communications

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**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:

- Integrate classroom learning with field experience
- Describe their work experience in their career field and growth in knowledge of the career field
- Demonstrate and explain advanced skills and knowledge gained at the workplace
- Demonstrate foundational job search and workplace competencies
- Describe understanding of workplace culture
- Demonstrate college core learning outcomes in communication and use of technology

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**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**

Upon successful completion of this course, the student should be able to:

- Integrate classroom learning with field experience
- Describe their work experience in their career field and growth in knowledge of the career field
- Demonstrate and explain advanced skills and knowledge gained at the workplace
- Demonstrate foundational job search and workplace competencies
- Describe understanding of workplace culture
- Demonstrate college core learning outcomes in communication and use of technology

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**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**

Upon successful completion of this course, the student should be able to:

- Integrate classroom learning with field experience
- Describe their work experience in their career field and growth in knowledge of the career field
- Demonstrate and explain advanced skills and knowledge gained at the workplace
- Demonstrate foundational job search and workplace competencies
- Describe understanding of workplace culture
- Demonstrate college core learning outcomes in communication and use of technology

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**HRTM 280 - Co-op Ed: Hospitality Management**

1-7 Credit(s)

This course provides the student with hospitality management-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.

**Prerequisite:** Majors only**Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Integrate classroom learning with field experience.
- Gain work experience in the student's career field.
- Be exposed to advanced skills and knowledge.
- Develop foundation workplace competencies.
- Be exposed to job opportunities and potentials; clarify and confirm career goals.
- Increase understanding of workplace culture.

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**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:

- Integrate classroom learning with field experience
- Describe their work experience in their career field and growth in knowledge of the career field
- Demonstrate and explain advanced skills and knowledge gained at the workplace
- Demonstrate foundational job search and workplace competencies
- Describe understanding of workplace culture
- Demonstrate college core learning outcomes in communication and use of technology

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**IDS 206S - Co-op Ed: Sustainability Coordinator Seminar**

1 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.

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**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.

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**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:

- Integrate classroom learning with field experience
- Describe their work experience in their career field and growth in knowledge of the career field
- Demonstrate and explain advanced skills and knowledge gained at the workplace
- Demonstrate foundational job search and workplace competencies
- Describe understanding of workplace culture
- Demonstrate college core learning outcomes in communication and use of technology

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**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:

- 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
- 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
- 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.

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**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.

**Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Integrate classroom learning with field experience
- Describe their work experience in their career field and growth in knowledge of the career field
- Demonstrate and explain advanced skills and knowledge gained at the workplace
- Demonstrate foundational job search and workplace competencies
- Describe understanding of workplace culture
- Demonstrate college core learning outcomes in communication and use of technology

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**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:

- Integrate classroom learning with field experience
- Describe their work experience in their career field and growth in knowledge of the career field
- Demonstrate and explain advanced skills and knowledge gained at the workplace
- Demonstrate foundational job search and workplace competencies
- Describe understanding of workplace culture
- Demonstrate college core learning outcomes in communication and use of technology

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**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:

- Integrate classroom learning with field experience

- Describe their work experience in their career field and growth in knowledge of the career field
- Demonstrate and explain advanced skills and knowledge gained at the workplace
- Demonstrate foundational job search and workplace competencies
- Describe understanding of workplace culture
- Demonstrate college core learning outcomes in communication and use of technology

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### **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 Multimedia 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:

- Integrate classroom learning with field experience
- Describe their work experience in their career field and growth in knowledge of the career field
- Demonstrate and explain advanced skills and knowledge gained at the workplace
- Demonstrate foundational job search and workplace competencies
- Describe understanding of workplace culture
- Demonstrate college core learning outcomes in communication and use of technology

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### **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. May be repeated up to 12 total credits. Please contact music cooperative education coordinator before attempting to register.

#### **Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Integrate classroom learning with field experience.
- Describe their work experience in their career field and growth in knowledge of the career field.
- Demonstrate and explain advanced skills and knowledge gained at the workplace.
- Demonstrate foundational job search and workplace competencies.
- Describe understanding of workplace culture.
- Demonstrate college core learning outcomes in communication and use of technology.

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### **NRG 206 - Co-op Ed: Energy Management 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.

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### **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 should be able to:

- Integrate classroom learning with field experience
- Describe their work experience in their career field and growth in knowledge of the career field
- Demonstrate and explain advanced skills and knowledge gained at the workplace
- Demonstrate foundational job search and workplace competencies

- Describe understanding of workplace culture
- Demonstrate college core learning outcomes in communication and use of technology

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### **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:

- Integrate classroom learning with field experience.
- Describe their work experience in their career field and growth in knowledge of the career field.
- Demonstrate and explain advanced skills and knowledge gained at the workplace.
- Demonstrate foundational job search and workplace competencies.
- Describe understanding of workplace culture.
- Demonstrate college core learning outcomes in communication and use of technology.

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### **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:

- Integrate classroom learning with field experience.
- Describe their work experience in their career field and growth in knowledge of the career field.
- Demonstrate and explain advanced skills and knowledge gained at the workplace.
- Demonstrate foundational job search and workplace competencies.
- Describe understanding of workplace culture.
- Demonstrate college core learning outcomes in communication and use of technology.

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### **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:

- Integrate classroom learning with field experience.
- Describe their work experience in their career field and growth in knowledge of the career field.
- Demonstrate and explain advanced skills and knowledge gained at the workplace.
- Demonstrate foundational job search and workplace competencies.
- Describe understanding of workplace culture.
- Demonstrate college core learning outcomes in communication and use of technology.

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### **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:

- Integrate classroom learning with field experience.



- Describe their work experience in their career field and growth in knowledge of the career field.
- Demonstrate and explain advanced skills and knowledge gained at the workplace.
- Demonstrate foundational job search and workplace competencies.
- Describe understanding of workplace culture.
- Demonstrate college core learning outcomes in communication and use of technology.

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### 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:

- Integrate classroom learning with field experience.
- Describe their work experience in their career field and growth in knowledge of the career field.
- Demonstrate and explain advanced skills and knowledge gained at the workplace.
- Demonstrate foundational job search and workplace competencies.
- Describe understanding of workplace culture.
- Demonstrate college core learning outcomes in communication and use of technology.

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### 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:

- Integrate classroom learning with field experience.
- Describe their work experience in their career field and growth in knowledge of the career field.
- Demonstrate and explain advanced skills and knowledge gained at the workplace.
- Demonstrate foundational job search and workplace competencies.
- Describe understanding of workplace culture.
- Demonstrate college core learning outcomes in communication and use of technology.

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### 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:

- Integrate classroom learning with field experience.
- Describe their work experience in their career field and growth in knowledge of the career field.
- Demonstrate and explain advanced skills and knowledge gained at the workplace.
- Demonstrate foundational job search and workplace competencies.
- Describe understanding of workplace culture.
- Demonstrate college core learning outcomes in communication and use of technology.

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### 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. Coursework is delivered online.

**Prerequisite:** PTA 103 and PTA 132 with a letter grade of C or better.

#### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Identify and define key issues and related program, division, college, workplace, state, and federal policies related to physical therapy practice.
- 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.
- 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.
- 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.

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### 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

Upon successful completion of this course, the student should be able to:

- Integrate classroom learning with field experience.
- Describe their work experience in their career field and growth in knowledge of the career field.
- Demonstrate and explain advanced skills and knowledge gained at the workplace.
- Demonstrate foundational job search and workplace competencies.
- Describe understanding of workplace culture.
- Demonstrate college core learning outcomes in communication and use of technology.

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### 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

Upon successful completion of this course, the student should be able to:

- Integrate classroom learning with field experience.
- Describe their work experience in their career field and growth in knowledge of the career field.
- Demonstrate and explain advanced skills and knowledge gained at the workplace.
- Demonstrate foundational job search and workplace competencies.
- Describe understanding of workplace culture.
- Demonstrate college core learning outcomes in communication and use of technology.

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### 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

Upon successful completion of this course, the student should be able to:

- Integrate classroom learning with field experience.
- Describe their work experience in their career field and growth in knowledge of the career field.
- Demonstrate and explain advanced skills and knowledge gained at the workplace.

- Demonstrate foundational job search and workplace competencies.
- Describe understanding of workplace culture.
- Demonstrate college core learning outcomes in communication and use of technology.

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### **SLD 280 - Co-op Ed: ASLCC**

1-2 Credit(s)

Intern with governmental and political professionals. Work on political campaigns, assist federal/state/local legislators or work with grass roots organizations. Explore potential career options, 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:

- Integrate classroom learning with field experience.
- Describe their work experience in their career field and growth in knowledge of the career field.
- Demonstrate and explain advanced skills and knowledge gained at the workplace.
- Demonstrate foundational job search and workplace competencies.
- Describe understanding of workplace culture.
- Demonstrate college core learning outcomes in communication and use of technology.

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### **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:

- Integrate classroom learning with field experience.
- Describe their work experience in their career field and growth in knowledge of the career field.
- Demonstrate and explain advanced skills and knowledge gained at the workplace.
- Demonstrate foundational job search and workplace competencies.
- Describe understanding of workplace culture 6. Demonstrate college core learning outcomes in communication and use of technology.

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### **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 cooperative education coordinator before attempting to register.

#### **Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Integrate classroom learning with field experience.
- Describe their work experience in their career field and growth in knowledge of the career field.
- Demonstrate and explain advanced skills and knowledge gained at the workplace.
- Demonstrate foundational job search and workplace competencies.
- Describe understanding of workplace culture.
- Demonstrate college core learning outcomes in communication and use of technology.

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### **WATR 206 - Co-op Ed: Water Conservation 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.

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### **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:

- Integrate classroom learning with field experience.
- Describe their work experience in their career field and growth in knowledge of the career field.
- Demonstrate and explain advanced skills and knowledge gained at the workplace.
- Demonstrate foundational job search and workplace competencies.
- Describe understanding of workplace culture.
- Demonstrate college core learning outcomes in communication and use of technology.

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### **WST 280 - Co-op Ed: Watershed Science Technician**

1-12 Credit(s)

This internship course offers work experience that integrates classroom work with practical experience in the field of watershed science. 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:

- Integrate classroom learning with field experience.
- Describe their work experience in their career field and growth in knowledge of the career field.
- Demonstrate and explain advanced skills and knowledge gained at the workplace.
- Demonstrate foundational job search and workplace competencies.
- Describe understanding of workplace culture.
- Demonstrate college core learning outcomes in communication and use of technology.

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## **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.

#### **Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Identify and utilize the elements of a story scene
- Comply with the boundaries of truth and creativity with in genre.
- Identify and apply scenes and summary, being able to distinguish between the two techniques.
- Work within a variety of non-fiction frameworks.
- Critique a variety of genres within creative nonfictions.
- Develop voice and style.
- Understand and apply theme, tone, symbol, motif, point of view, dialogue, and characterization.
- Revise, edit, and potentially polish works of nonfiction prose.
- Produce a portfolio of 3-4 original works of creative nonfiction.
- Have a working knowledge of representative authors from the genre.

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### **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. Elements covered include character, conflict, plot, point of view, setting, theme, dialogue, and tone. Stories by well-known authors are read and discussed as models. Students generally write two to three stories in addition to completing other exercises, peer responses, and a journal. Workshop discussions are used along with instructor feedback to guide revision and editing of student work.

#### **Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Prepare and submit a manuscript of original writing to a magazine or publisher.
- Participate in selecting, editing, and publishing literary texts for a magazine or publication, either at Lane or elsewhere.
- Working with beginning writers in developing and editing their writings, or preform another Service Learning activity related to writing.
- Help organize and/or perform in a literary reading.

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### 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.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Know how to write their own poetry, and have a portfolio of 5-10 revised, original poems.
- Know how to draft, read critically, and revise their poetry.
- Know how to recognize and utilize a variety of elements of poetry, including sound, rhythm, tone, and figures of speech.
- Have received critiques of their poetry from the instructor and their classmates.
- Learn to read effectively and to help edit the poetry of their classmates.
- Have been introduced to a wide variety of published poetry, including a variety of themes, forms, and styles.
- Learn to use and evaluate traditional and non-traditional forms.

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## 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

Upon successful completion of this course, students will be able to:

- Describe the organizational structure and general processes of the United States criminal justice system.
- Summarize the philosophical and legal principles that underpin, guide, and circumscribe the administration of justice in the United States.
- Interpret the development of criminal law and criminal justice institutions in the historical context of gender, ethnic, and race relations in the United States.
- 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.
- Explain the requirements for entrance into the most common criminal justice careers.

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### 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

Upon completion of the course, the student should be able to:

- Describe the most influential philosophical and theoretical explanations of crime and delinquency.

- Explain how historical, political, and social forces influenced the development of criminological thought.
- Describe the major trends and patterns of crime in the United States and the primary methods used to measure and study crime and delinquency.
- Identify the demographics and social conditions associated with crime and delinquency.
- Assess the relevance and utility of specific criminological theories as applied to specific forms of crime and delinquency.
- Critically evaluate criminal justice policies based on a knowledge and understanding of the causes and correlates of crime and delinquency.

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### 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

Upon successful completion of this course, the student should be able to:

- Gain a thorough knowledge of the juvenile justice system.
- Apply sociological theory to better understand juvenile criminal behavior.
- Learn the nature of juvenile justice career paths and their own qualifications for various careers in criminal juvenile justice.
- Understand the importance of inter-disciplines and the need for a well-rounded education in juvenile justice.
- Qualify for education requirements for entry-level public safety and juvenile justice careers.
- Learn the elements of providing effective supervision for juvenile offenders.
- Learn skills for working with juvenile delinquents in social service, school, and other human service settings.
- Understand the issues of human diversity and specific minority populations as they apply to group interventions, juvenile delinquency, work groups and organizations.
- Gain practice in developing professional skills and strategies for interpersonal influence and change agent skills in dealing with at risk teens and juvenile delinquents.
- Understand the legal, ethical, and administrative issues in working with the juvenile justice system in a variety of settings.

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### 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

Upon successful completion of this course, students will be able to:

- Summarize the past and present status of women (as offenders, victims, and professionals) in the criminal justice system.
- Describe how gender diversity in the criminal justice field has evolved over time.
- Describe gender role stereotypes and their impact on male and female socialization.
- Differentiate between sex and gender.
- Analyze the impact of gender role socialization on behavioral outcomes.
- Evaluate the importance of reducing gender disparity in the criminal justice system.

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### CJA 210 - Criminal Investigation 1

3 Credit(s)

Fundamentals of criminal investigation, theory, and history; crime scene to courtroom with emphasis on techniques appropriate to specific crimes.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Define and understand of criminal investigation and the importance to contemporary society.
- Understand the processes by which an investigator determines whether a crime has been committed.



- Recognize the importance to develop skills relative to observing, inductive and deductive reasoning and interpersonal communication.
- Recognize scientific resources that are available to assist in a criminal investigation.
- Recognize specific techniques used in the investigation of crime.
- Be acquainted with Criminal Laboratory resources available to criminal investigators.
- Identify sources of information that will assist investigators in locating suspects and witnesses and/or provide information valuable in the solution of crime.
- Recognize strategies and tactics that may be employed during the investigation of specific crimes.
- Be aware of jurisdictional issues, venue and legal limitations affecting criminal investigations.

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### **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 the criminal justice profession. 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:

- Compare the most common forms of criminal justice documentation and reporting.
- Summarize the legal requirements and considerations that govern criminal justice documentation methods and products.
- Demonstrate the ability to observe and accurately describe people, places, and things, consistent with criminal justice practices and requirements.
- Demonstrate the ability to assimilate and accurately report information from multiple sources in a clear and appropriately concise manner.

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### **CJA 213 - Interviewing and Interrogation**

3 Credit(s)

This course will examine the dynamics of psychological persuasion existing as a product of criminal interrogations. The processes and techniques used will be the focus during the course with specific attention to the practical and legal limitations of achieving the goals of interviewing.

#### **Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Understand the dynamics of psychological persuasion.
- Be acquainted with the legal distinctions of “custody” and “arrest” relative to interviewing and interrogation.
- Recognize the difference between interviewing and interrogation relative to the investigative process.
- Recognize environmental considerations that promote successful interviewing/interrogation.
- Be familiar with psychological dynamics associated with interviews/interrogations.
- Recognize verbal and non-verbal behavior associated with truthful/deceptive responses.
- Be acquainted with processes that ensure thorough interviewing.
- Be aware of preliminary preparations that will facilitate successful interviews.
- Understand the legal requirements and limitations relative to criminal interrogations.

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### **CJA 214 - Introduction to Forensic Science**

4 Credit(s)

This course is an introduction to forensic science, crime scene investigations, physical evidence, and legal aspects of evidence, and is designed for all students interested in forensic science. The student will learn how to process crime scenes, the types of physical evidence that may be encountered, and how evidence is analyzed in the laboratory. Emphasis will be placed on the interpretation of analytical test results as they relate to the limitations of the evidence itself, how the evidence was collected, the case context, and other factors. The student will have hands-on laboratory exercises in analyzing and comparing physical evidence. Critical thinking and the application of the scientific method will be emphasized in all laboratory exercises. Class concepts will be reinforced with actual case examples whenever possible. Lab included.

#### **Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Gather, comprehend, and communicate scientific and technical information in order to explore ideas, models and solutions and generate further questions: Learn and perform crime scene processing/reconstruction and analysis of various kinds of physical evidence based on tests performed; how to interpret the results of tests and develop analytical schemes for further hypothesis development.
- 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: Analyze crime scenes and various physical evidence types according to the scientific method: developing hypothesis, testing hypothesis, evaluating results, re-defining hypothesis if needed. Critical thinking ability is required to make appropriate hypothesis.
- Assess the strengths and weaknesses of scientific studies and critically examine the influence of scientific and technical knowledge on human society and the environment: Current events in forensic science are presented with an emphasis on instances when the science was misinterpreted or inappropriately applied. Some post-conviction release cases and instances where forensic science has been both well used and poorly used are discussed, along with how this impacts society's impression of forensic science as a whole.
- Analyze the development, scope, and limitations of fundamental scientific concepts, models, theories, and methods: The history of forensic analytical techniques, and how they developed, is presented with each lecture of the various types of physical evidence. Whether or not those techniques have withstood the tests of time and remain currently in use in modern forensic laboratories is discussed.
- 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 creative insight: Analyze crime scenes and various physical evidence types according to the scientific method: developing hypothesis, testing hypothesis, evaluating results, re-defining hypothesis if needed. Critical thinking ability is required to make appropriate hypothesis and creative thinking required to determine what tests or experiments are needed to prove or disprove the hypothesis.
- Examine relationships with other subject areas, including the ethical application of science in human society, and the relevance of science to everyday life: Forensic science is an integral part of the criminal justice system as a whole. Forensic science may be appropriately or inappropriately used and/or interpreted. How society perceives forensic science, and crime and criminal behavior in general, is linked to their perception of forensic science and how it can be used (or abused) in the criminal justice system. This is most accessible to citizens through media portrayals of crime TV shows but may be apparent elsewhere in everyday life depending on personal experience.
- Engage students in collaborative, hands-on and/or real-life activities that develop scientific reasoning and the capacity to apply mathematics, and that allow students to experience the exhilaration of discovery, and: About half of the classes incorporate a hands-on laboratory that relate directly to the type of physical evidence covered in the lecture. They require the students to apply the techniques they were taught, use basic math, measuring, and calculator skills, and are designed for students to have success.
- Engage students in the design of algorithms and computer programs that solve problems.

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### **CJA 220 - Introduction to Criminal Law**

3 Credit(s)

Historical development, philosophy of law and constitutional provisions, definitions, classification of crime and their application to the system of criminal justice; legal research, study of case law, methodology, and concepts of law as a social force.

#### **Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- To provide an introduction to, and an overview of, the substantive aspects of criminal law.

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### **CJA 222 - Criminal Law: Procedural Issues**

3 Credit(s)

Developmental history in English common law and United States case law; constitutional and statutory provisions relative to arrest, search and seizure. Rights and responsibilities of citizens and criminal justice personnel and agencies.

#### **Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- To provide an introduction to, and an overview of, the procedural aspects of criminal law

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### **CJA 232 - Correctional Casework**

3 Credit(s)

Basic concepts of interviewing and counseling techniques used by correction officers, in one-to-one contacts with clients. To prepare the student for practice in the public safety fields, for both juvenile and adult clients.

#### **Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Understand basic practices, functions and purposes of the Corrections system.
- Know basic interview, assessment, counseling, and casework techniques as they interface with the rest of the Criminal Justice system.

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## **Culinary Arts**

### **CA 110 - Culinary Adventuring: Local Guest Chef Series**

2 Credit(s)

Open to the Public. It is designed to offer students cooking instruction by well known and respected local chefs and food purveyors through lecture, demonstration, hands-on experiences and tastings.

#### **Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Have developed a greater understanding and appreciation of a variety of cuisines, cooking techniques and styles.
- Demonstrate a greater level of basic cooking skills during hands-on activities.
- Practice good sanitation and follow safety rules given in class.
- Have developed a greater taste for fine food by eating and discussing the food prepared in class.
- Have developed an insight and awareness of the principles of cooking with locally available, seasonal and sustainable ingredients.
- Use a variety of types of cooking equipment and utensils available such as grills, convection ovens and six top burners.
- Demonstrate an understanding of plate design and presentation.
- Prepare basic garnishes.

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### **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:** COC/CAHRTM Majors only.

#### **Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Develop an understanding of the historical, cultural, and social importance of Cake and its role in the study of baking and pastry.
- Develop an understanding of fundamental cake baking and decorating techniques and methods.
- Demonstrate fundamental cake baking and decorating techniques with some proficiency.
- Demonstrate an awareness of Oregon ingredients and products to support its organic and sustainable values.
- Have knowledge of traditional cake celebrated on holidays and special occasions.
- Have knowledge of local, skilled bakers and cake decorators to provide networking within the community.

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### **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.

#### **Learning Outcomes**

Upon completion of this course, students will be able to:

- 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.
- Identify, describe and perform safe and sanitary work habits required in

the food service industry.

- Define the terms and concepts used in the preparation of volume foods.
- Perform basic math functions, measure ingredients and portions, as well as convert recipes to higher and lower yields.
- Maintain and properly use the various cutting tools used in the preparation of foods, emphasizing proper safety techniques.
- Describe and perform the common bread techniques used in the industry.
- Prepare the basic polish, sponge, levian, pate fermentee, soaker, and porrage techniques.
- Explain and prepare the various stages of preferment.
- 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.

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### **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:

- 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.
- Develop fundamental baking, pastry, and cooking skills through the execution of authentic recipes and traditional cooking methods.
- Develop the knowledge of current trends in our global culinary community and the evolution of traditional recipes to their current interpretations.
- Encourage students' exploration of the roots of their personal nationalities, the cultural customs and traditions reflected in the cuisine, and handed-down family recipes.
- Be competent in various international baking and pastry techniques.
- Develop an understanding of a global region or country's uniqueness reflected in their various fruits, vegetables, herbs, spices, and culinary specialties.
- Develop an "international taste palate" – understanding varieties of flavors and textures depending on a particular global region or specific country.
- Work together as a team developing kitchen relations and creative culinary skills to execute a weekly menu of International flavors.

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### **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:

- Demonstrate an understanding of fundamental baking and pastry techniques and methods.
- Develop essential baking and pastry skills with some proficiency.
- Demonstrate an understanding of regional cuisine and the history and availability of local fruits and vegetables each season.
- Demonstrate an awareness of Oregon agriculture and its organic and sustainable values.
- Have knowledge of holidays and cultural traditions through seasonal recipes.
- Have knowledge of sustainable cuisine practices of farms, markets, vendors and restaurants.

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### **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:** COC/CAHRTM Majors only.

## Learning Outcomes

Upon successful completion of this course, students will be able to:

- Demonstrate an understanding of fundamental baking and pastry techniques and methods.
- Develop essential baking and pastry skills with some proficiency.
- Develop an understanding the core values of baking seasonally with fresh ingredients, along with supporting the local, agricultural community.
- Demonstrate an awareness of Oregon agriculture and its organic and sustainable values.
- Have knowledge of fundamental baking techniques as well as the current culinary trends.
- Have knowledge of sustainable cuisine practices of farms, markets, vendors and restaurants.

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### 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.

**Prerequisite/Corequisite:** CA 175 Culinary Arts majors only.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Demonstrate knowledge and understanding of state and federal food sanitation and safety concept and regulations as they apply to a food production setting and HACCP principles.
- Identify and demonstrate safe and proper use of common kitchen tools and equipment.
- Identify and explain the various menu types, concepts, and uses.
- Apply and perform basic math functions, including applications to recipe format and use, conversion and costing.
- Describe properties, function, and uses of various ingredients.
- Utilize standard weights and measures, scaling and measurement techniques.
- Demonstrate understanding and perform basic cooking techniques.

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### 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:

- List, describe and demonstrate a variety of cooking techniques and principles associated with the proper cooking of meats, poultry, fish and seafoods.
- Identify, explain and describe the preparation and uses of a variety of oils, herbs, spices, marinades and rubs used in food preparation.
- Describe and demonstrate correct safety and sanitation principles and habits associated with food preparation.
- Identify, explain and demonstrate appropriate math skills needed and used in performing recipe conversions, costings, requisitions, and yield tests.
- Identify, describe and explain as well as perform basic meat fabrication skills on a variety of meats, fish/seafood and poultry items.
- 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.
- Identify and explain appropriate techniques and principles that maximize retention of nutrients in food products.
- Identify, describe and demonstrate a variety of sandwiches.
- 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.

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### CA 163 - Introduction to Cooking Theories 3

7 Credit(s)

This class focuses on baking and pastry for cooks; an introduction to the tools and equipment of the bakeshop, baking history, terminology and baking concepts. Focus is on basic baking and pastry theory and introduction to baking and pastry techniques.

**Prerequisite:** CA 162.

## Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Demonstrate knowledge and understanding of state and federal sanitation and safety concepts and regulations as they apply to a bakeshop production setting and HACCP principles.
- Identify and demonstrate safe and proper use of common bakeshop tools and equipment.
- Identify and explain the various concepts and terminology used in a baking and pastry setting.
- Apply and perform basic math functions including applications to recipe format and use, conversion, costing and baker's percentages.
- Describe properties, function, and uses of various baking and pastry ingredients.
- Utilize standard weights and measures, scaling and measurement techniques used in a baking and pastry environment.
- Demonstrate understanding and perform basic baking and pastry techniques and principles.

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### 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.

**Prerequisite/Corequisite:** CA 175, GPC/CAHM majors only.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Identify, explain and perform proper sanitation and safety principles as they pertain to a production bakeshop setting.
- Identify, describe and properly use a variety of bakery equipment, hand tools and bakingware.
- Identify, describe and demonstrate the proper use of ingredients used in various baking processes and products.
- Explain and perform proper usage of various bakery formulas and terminology.
- Describe proper handling of ingredients, their functions and applications to bakeshop production.
- Demonstrate proper application and usage of weights and measurements as applied to a variety of dry and non-dry ingredients.
- Explain, describe and demonstrate proper production methods relating to a variety of baked goods, including: breads, artisan breads, quick breads, yeasted breakfast goods, laminated doughs, and pies.
- Identify and describe the characteristics, functions and interactions of major baking ingredients.
- Explain and demonstrate the proper mixing techniques and sequence of adding ingredients to mixing formula.

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### 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, the student should be able to:

- Identify, explain and perform basic pastry techniques.
- Identify, describe and properly use a variety of bakery equipment, hand tools and baking ware.
- Identify, describe and demonstrate the proper use of ingredients used in various baking processes and products.
- Explain and perform proper usage of various bakery formulas and terminology.
- Describe proper handling of ingredients, their functions and applications to bakeshop production in CA 163B.
- Demonstrate proper application and usage of weights and measurements as applied to a variety of dry and non-dry ingredients.
- Explain, describe and demonstrate proper production methods relating to a variety of baked goods, including: short pastries, puff pastry, éclair paste, strudel, tarts, cakes, fillings and frostings, and cookies.
- Identify and describe the characteristics, functions and interactions of major baking ingredients used in CA 163B.



- Explain and demonstrate the proper mixing techniques and sequence of adding ingredients to mixing formulas used in CA 163B.

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### 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, the student should be able to:

- Identify, explain and perform basic pastry techniques.
- Identify, describe and properly use a variety of bakery equipment, hand tools and baking ware.
- Identify, describe and demonstrate the proper use of ingredients used in various baking processes and products.
- Explain and perform proper usage of various bakery formulas and terminology.
- Describe proper handling of ingredients, their functions and applications to bakeshop production in CA 163B.
- Demonstrate proper application and usage of weights and measurements as applied to a variety of dry and non-dry ingredients.
- Explain, describe and demonstrate proper production methods relating to a variety of baked goods, including: custards, mousses, soufflés, frozen desserts, fruit desserts, chocolate and sugar techniques, dessert presentation, and specialty dessert techniques.
- Identify and describe the characteristics, functions and interactions of major baking ingredients used in CA 163C.
- Explain and demonstrate the proper mixing techniques and sequence of adding ingredients to mixing formulas used in CA 163C.

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### CA 175 - Foodservice Sanitation and Safety

2 Credit(s)

Open to the Public. This course presents the basics of food service sanitation. The text examines a systematic approach to sanitation management by the use of control points and effective use of multiple resources. The NRAEF ServSafe Certificate will be issued upon successful completion of the NRAEF Exam. May be offered online.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Know reasons and principles of proper personal hygiene, safe and effective food handling, and proper and effective cleanliness and sanitation.
- Understand food contaminants and their prevention.
- Know proper storing and processing of raw food products; proper heating, cooling, and storage of cooked foods.
- Know proper kitchen and equipment sanitation procedures.
- Know proper personal hygiene principles 6. Understand local, state, and national health and food safety standards, including haacp principles.

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### CA 176 - Concepts of Flavor

2 Credit(s)

This class will introduce students to the vocabulary and concepts of what we term "flavour". Students will explore how these concepts interplay between food items and between food and beverages.

**Prerequisite:** CA 163, CA 175, CA 200 , HRTM 105, HRTM 106 , MTH 025 or higher.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Describe an understanding of the taste sensations in food and beverages by: a. Listing and describing the basic terminology used to distinguish the predominant tastes of raw and prepared foods and beverages; b. Identifying, explaining and describing the relationship between tastes, aromas, texture and temperature of raw and cooked foods and a variety of beverages.
- Describe an understanding of the interplay of the aroma of food by describing and demonstrating cooking and extraction techniques.
- Describe an understanding of how food flavors might interact with a variety of beverage flavors (including wine) by applying the guidelines for food and beverage pairings.

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### CA 292 - Advanced Cooking Theories 1

8 Credit(s)

Prerequisite: CA 163, CA175, HRTM 105, HRTM 106, MTH 025 or higher.

Contemporary and advanced food preparation emphasizing the cold kitchen, garde manger. Students practice and serve dishes to the public in the student-run dining room, rotating through restaurant and kitchen positions, developing, planning and serving a garde manger-themed dinner menu.

**Prerequisite:** CA 163, CA 175, HRTM 105, HRTM 106 . MTH 025 or higher

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Identify tools and equipment used in garde manger, emphasizing safety and sanitation procedures.
- Prepare basic garnitures.
- Identify and discuss ingredients used in the cold kitchen.
- Develop fundamental skills in the preparation of cold items to include soups, salads, sauces, dressings, marinades, relishes, sandwiches, canapés, and hors d'oeuvres.
- Identify and discuss cheese and dairy products.
- Develop fundamental skills in the preparation of forcemeats, such as pates, galantines, terrines, and sausages.
- Prepare savory mousses and gelatins.
- Develop fundamental skills in the preparation of aspics for glazing.
- Demonstrate buffet presentation techniques to include platters, trays, bowls, and other containers.
- Demonstrate decorative pieces to include fruit and vegetable carvings, salt dough, tallow and ice carvings.
- Describe the various cuisines and contributions of leading culinarians.

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### CA 293 - Advanced Cooking Theories 2

8 Credit(s)

Contemporary and advanced food preparation, emphasizing international cuisine. Students practice and serve traditional dishes from many countries to the public in the student-run dining room, rotating through restaurant and kitchen positions, developing, planning and serving an International-themed dinner menu.

**Prerequisite:** CA 292.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Explore current international cuisine through lecture and hands-on lab activities.
- Further develop students' understanding and skills, achieved by employing advanced culinary principles and techniques using a variety of recipes and methods to prepare appetizers, entrées, vegetables, and desserts from different countries of the world.

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### 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 293.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Have a greater understanding of the history, culture and key points in the development of American regional cuisine.
- Explain the influences of each region, with emphasis on local and native ingredients.
- Identify proper ways to prepare meat, including methods of cooking, cutting, trussing, carving and judging doneness, using regional American techniques.
- Correctly prepare fish and shellfish, using different cooking methods.
- 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.
- Identify the basics in preparing different salads, including preparing a variety of different kinds of salads.
- Demonstrate skill in preparing traditional American desserts.
- Recognize the importance of food presentation by making vegetable decorations and creative garnishes for all prepared dishes.
- Practice high standards of sanitation and demonstrate safety rules given in class.
- Practice different kinds of service by serving prepared food to other students and to the public.

- Develop a taste for fine food by eating and discussing the food prepared in class.
- Describe the differences in ethnic cooking techniques and their relationship with today's American cuisine.

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## Dance

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### 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:

- A basic understanding of dance creativity, technique and terminology.
- Increased knowledge of proper alignment and body mechanics.
- Ability to retain simple and basic movement phrases and to perform rhythmically.
- Improved strength, flexibility, and endurance in the field of dance.
- Ability to create simple movement phrases.
- Ability to improvise with simple structures.

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### 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. May be repeated up to 12 total credits. Class will focus on either mat work or barre. See schedule notes.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Demonstrate and discuss efficient alignment.
- Demonstrate and discuss principles of core support and stability.
- Demonstrate and discuss Integration of transverse abdominus in mat exercises.
- Demonstrate and discuss principles and integration of breathing in mat exercises.
- Demonstrate and discuss Clear articulation and initiation of spinal movement.
- Demonstrate and discuss Clear articulation and initiation of iliofemoral joint.
- Demonstrate and discuss clear articulation and support of the shoulder girdle and scapulohumeral joint.
- Demonstrate and discuss working knowledge of Pilates mat exercises.
- Identify and correct inefficient movement patterns which cause undue stress on the body.

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### 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. Offered winter term only.

**Prerequisite:** D 257.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Create a dance phrase or movement motif as thematic material for dance composition.
- Identify and demonstrate manipulative devices in creating variations of dance themes.
- Demonstrate improvisation skills.
- List and explain the elements of movement as an expressive form such as dynamics, shape, space, weight, stage-facings and directions.

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### 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:

- Have knowledge of various breathing and sound techniques.
- Understand the value of exploring wave motion as it relates to strength, flexibility and vitality.
- Have techniques for tracking sensation, awareness, and emotion.
- Understand movement possibilities of fluid and connective tissue.
- Have knowledge of the scientific research related to Continuum Movement.
- Understand the value of micro-movements.

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### 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:

- Have a basis for exploring Yoga philosophy and techniques related to dance.
- Have a deepened awareness of body-mind connection.
- Have knowledge of Yoga postures that support dance technique.
- Have knowledge of breathing techniques for performance preparation.
- Have knowledge of meditation techniques to support the creative process.
- Have an understanding of safe and effective Yoga practices.

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### 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:

- Demonstrate and discuss an understanding of efficient alignment.
- Demonstrate and discuss mobility of the spine and head-tail connection in flexion, extension and rotation.
- Demonstrate and discuss articulation of hip-joints and feet.
- Demonstrate and discuss ability to release weight and to move actively into and out of the floor.
- Demonstrate and discuss placement and mobility of the shoulder girdle and arms.
- Demonstrate and discuss modern dance concepts: space, dynamics, rhythm and improvisation.
- Demonstrate and discuss ability to remember and perform simple dance phrases.

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### 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:

- Efficient alignment.
- Articulation of hip-joint and feet.
- Placement and mobility of the scapula and arms in weight support and port de bra.
- Mobility of the spine and head-tail connection and ability to move in various spatial directions.
- Ability to remember and perform short movement phrases.
- Ability to release weight and to actively move body weight in and out of the floor.
- Demonstration of the center versus off-center movement and weight shifts.

- Explorations in modern dance concepts: space dynamics, rhythm, and improvisational structures.

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### 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:

- Efficient alignment in an increased dynamic range on and off center.
- Articulation of hip-joint and feet to communicate information to another.
- Placement and mobility of the scapula and arms in weight support and port de bra and ability to communicate information to another.
- Mobility of the spine and head-tail connection and ability to move in various spatial directions and ability to communicate to another.
- Ability to release weight and to actively move body weight in and out of the floor and ability to communicate to another.
- Explorations in modern dance concepts: space dynamics, rhythm, and improvisational structures.

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### 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:

- Discuss, demonstrate, and identify developmental patterns.
- Demonstrate, identify proximal and distal initiation of movement.
- Discuss and identify bones and related features of skeletal system.
- Discuss, demonstrate body-mid centering principles.
- Utilize developmental patterns as analytical tools for movement. Demonstrate elements of re-patterning

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### 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:

- Demonstrate beginning level in Hip-Hop, Jazz Dance, and Street Dance.
- Improved coordination and rhythmic movement skills.
- Improved strength, flexibility and endurance.
- Have the ability to retain simple movement phrases.
- Have an appreciation for the history of Hip-Hop.
- Have an understanding of proper alignment.

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### 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:

- Efficient alignment. Articulation of hip-joint and feet.
- Placement of arms in port de bra. Spinal integration in port corps.
- Ability to maintain core support during ballet barre exercises.
- Ability to correctly demonstrate plies, tendus, degages, petit battements, rond de jamps, developpes, fondus.

- Ability to do a pas de bouree.
- Name and perform exercise with technical ballet terms.

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### 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:

- Demonstrate ballet technique and style.
- Demonstrate an appreciation and discipline in ballet dance.
- Demonstrate knowledge and maintenance of proper alignment and use of the body in motion.
- Demonstrate ability to retain simple movement sequences.
- Demonstrate improved strength, flexibility and endurance in the field of ballet.

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### 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:

- Efficient alignment.
- Articulation of hip joint and feet.
- Placement of arms in port de bra.
- Spinal integration in port de corps.
- Ability to maintain core support during ballet barre exercises.
- Ability to correctly demonstrate plies, tendus, degages, petite battements, rond de jamps, developpes and fondus.
- Ability to perform positions of the body, complex port de bras and port de corps.
- Ability to combine ballet jumps and traveling steps.
- Name and perform exercises with technical ballet terms.

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### 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:

- An increase in jazz technique and style.
- An appreciation and discipline in the jazz idiom.
- Knowledge of proper alignment and use of the body.
- Ability to retain simple movement phrases.
- Improved strength, flexibility and endurance in the field of dance.
- Simple coordination and syncopated movement skills.

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### 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:

- Demonstrate intermediate level skill in Hip-Hop, Jazz Dance, and Street Dance.
- Sophisticated coordination and rhythmic movement skills.



- Improved strength, flexibility and endurance.
- Have the ability to retain simple movement phrases.
- Have an appreciation for the history of Hip-Hop.
- Have a deeper understanding of proper alignment.

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### 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:** Intermediate Ballet.

#### Learning Outcomes

Upon completion of this course the student will be able to:

- Be able to perform and articulate the quarter, half and full pointe at the barre.
- Know the dynamics of alignment and apply that knowledge directly to variations in centre.
- Be able to move from barre to centre work with strength and clarity.
- Express meaning and emotion through performing variations.
- Develop personal movement "voice" with honest and open expression.
- Perform variations with self-confidence and ease.
- Work with others with respect and value for diversity.

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### 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. Writing 121 recommended. Offered winter term only.

**Prerequisite:** WR 121 recommended.

#### Learning Outcomes

Upon successful completion of this course, student should be able to:

- Discuss dance as a basic human activity.
- Analyze the use of space, time, dynamics, form and content of a dance.
- Recognize choreographic elements in varied dance works.
- Articulate verbally and in writing the basics for appreciating or not, any given work of choreography.

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### D 256 - Anatomy of the Moving Body

4 Credit(s)

Anatomy for the Moving Body in 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:

- Identify anatomical terminology for bones and muscles of the body.
- Describe how bones, joints and muscles coordinate to support movement.
- Analyze movement using kinesiological term.

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### 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. This course is a pre-requisite for D160 and D260. Contents and expected learning proficiencies of this course vary from term to term. May be repeated up to 12 total credits. Offered fall term only.

#### Learning Outcomes

Upon successful completion of this course, student should be able to:

- Improvise a dance phrase based on selected structures.

- Demonstrate a working knowledge of stage space.
- Identify and demonstrate manipulations of a given dance movement.
- List and explain the elements of movement as an expressive form such as body, dynamics, shape and space.

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### 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. Offered spring term only.

**Prerequisite:** D 257 and D 160.

#### Learning Outcomes

Upon successful completion of this course, student should be able to:

- Create a dance phrase or movement motif as thematic material for group choreography.
- Identify and demonstrate manipulative devices in creating variations of dance themes for group works.
- Demonstrate improvisation skills and ability to design improvisation structures for a group.
- List and explain the elements of dance movement as an expressive form such as body, dynamics, shape and space.

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### 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:

- Demonstrate performance skills and rehearsal skills in dance.
- Demonstrate experience in the discipline of company rehearsals and the demands it places on the individual performer.
- Perform in a public performance.

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## 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.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Polish amalgam surfaces.
- Using a classmate as a patient, mix, place and remove periodontal dressing.
- Remove simulated cement from a typodont.
- Obtain alginate impressions with bite registrations on live clients.
- Place posterior rubber dams on a live client.
- Coronal polish teeth.
- Construct one set of bleach trays.
- Reline one set of dentures on a typodont.

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### 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. Taught online.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Pronounce, define and spell correctly dental terminology introduced in reading, written assignments, during online classroom activities, and class forums.

- 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.
- Differentiate between and compare the various dental specialties.
- Compare the concepts of law and ethics and describe their applicability to the practice of dental assisting.
- 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.
- Legal documentation of patient records.

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#### 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:

- 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 .
- Discuss principles, procedures and personal behaviors designed to achieve sterilization and optimum infection control in the dental operatory.
- Describe products used and list the steps taken to ensure sterilization of instruments and to test sterilizers for microbial kill.
- Identify bloodborne pathogens and chemical hazards that present personal danger to dental healthcare workers.
- Explain the clinical significance of communicable diseases, the modes of transmission, types, epidemiology, and vaccines available for prevention.
- 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.

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#### 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. May be taught online.

##### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Develop a philosophy of preventive dentistry.
- View preventive dentistry as an integral part of the overall field of dentistry.
- Define plaque and its relationship to dental caries and periodontal disease.
- Recognize and define characteristics of healthy and non-healthy periodontium.
- Describe and demonstrate the usefulness of plaque index.
- Describe the direct method of applying disclosing solution and its purpose.
- Describe the procedure, types, advantages, and disadvantages of topical fluoride methods.
- List and describe the different brushing techniques.
- Describe and demonstrate the correct use of dental floss.
- Identify and describe the use of other oral physiotherapy aids.
- Prepare a lesson plan on tooth brushing to be demonstrated to a patient.
- Identify areas of change for personal growth in wellness” lifestyle.

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#### 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

Upon successful completion of this course, the student should be able to:

- Identify the six food groups and note the primary nutritional contributions

of each group.

- Describe the role of carbohydrates, fats and protein in the diet.
- Identify essential vitamins and minerals, stating their primary function and listing good food source of each.
- Identify and define good snack foods and how we can change snack habits.
- Identify areas of change for personal growth in wellness” lifestyle.

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#### 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:

- Describe the division of the human body using correct directional terminology.
- Describe the structure and function of body cells and the structure and function of body tissue.
- Describe the histology of the bone, various processes and depressions, and the structure of the vertebral column.
- Name the bones of the thorax, pelvis, and extremities.
- Describe the types of joints found in the body.
- Name the three types of muscles and describe their structure and function.
- Describe the action of the muscles, how energy is used for muscular contraction and types of muscle attachment.
- Know the general structure and function of the Central Nervous System and the Peripheral Nervous System.
- Explain the function of the main components of the Endocrine System.
- Name the components of the Circulatory System and describe their functions.
- Describe the relationship of the blood and Lymphatic Systems.
- Explain the function of the Non-specific Body Defenses and the function of the Immune System.

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#### 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. This is a hybrid course, with a portion of the class taught online.

##### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- List, both orally and in writing, the distinguishing characteristics of the human dentition.
- Compare and contrast the anatomical landmarks of the primary and permanent teeth.
- Define dental anatomy terminology.
- Utilize the universal numbering system to identify dentition.
- Describe in writing the symptoms and treatment for TMJ disorder.
- Describe in writing the taste sensations of the tongue.
- Show an awareness of the differences of the maxillary and mandibular teeth and their location in the mouth.
- Name the bones and major muscles and nerves of the head and neck.
- Define the terms used with smokeless tobacco and describe the effects of smokeless tobacco on the oral cavity.

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#### 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

Upon successful completion of this course, the student should be able to:

- Identify and describe in writing, the principal and secondary uses, advantages and disadvantages, chemical and mechanical properties of each dental material studied.
- Prepare each material in a manner demonstrates its normal setting time, strength, and durability.
- Demonstrates the operation of lab equipment properly, safely, and efficiently.

- Perform all laboratory skills assigned with 75% accuracy.
- Select the correct equipment to accurately manipulate each dental material.
- Follow established safety procedures and OSHA guidelines when working in the laboratory setting.

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### 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 amalgam and composite, die construction, retainers, bleaching trays, denture relines, temporary crowns & restorations, sealants and custom trays.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- The principle and secondary uses, advantages and disadvantages, and limitations of each material studied.
- Prepare each material for use, and use it in a manner that does not negatively affect its setting time, strength, durability, or any other significant clinical properties.
- Be able to identify factors which affect the clinical properties of given dental materials.
- Demonstrate precision technique for all laboratory procedures.
- operate the equipment needed for completion of the various procedures during the course without the possibility of harm to themselves or other persons, and in such a way that equipment maintenance is at the maximum.
- Demonstrate responsibilities and initiative by completing the assigned laboratory duties to the satisfaction of the instructor.
- Follow safety procedures and OSHA guidelines when working in the laboratory setting.
- Demonstrate proper manipulation, fabrication and polishing of specified laboratory materials and appliances.

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### 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 accounts using Eaglesoft dental software. Teaching is done both online and in a computer lab to support computerized instruction.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:  
Business Management:

- List dental Business Assistant duties
- Describe barriers in communication
- Identify three types of management Appointment Management.
- Identify common scheduling problems, and successfully apply an appropriate correction.
- Compare and contrast a variety of appointment book styles.
- Understand the appointment matrix.
- Successfully schedule for multiple usage Dental Office Forms.
- List the importance of maintaining accurate client records.
- List the procedures for record collection on a new client filing.
- Accurately demonstrate the standard rules for alphabetic filing.
- Compare and contrast the different filing systems.
- Demonstrate correct file management Inventory Systems/Supply Ordering.
- List classes of supplies.
- Demonstrate catalog supply ordering.
- List merits of different inventory systems Recall Systems.
- Explain the purpose for a recall system.
- Identify systems of a recall Dental Insurance.
- Successfully demonstrate a completed insurance form.
- Understand basic ADA codes Written Communications.
- Complete a newsletter for the dental office.
- List and compare various methods used in dental marketing.
- Identify the basic rules of letter writing.
- Define and list the classifications of incoming mail.
- Identify special mail services Telecommunications.
- Practice efficient telephone techniques.
- Plan and place outgoing calls.

- Recognize the different categories of telephone calls Bookkeeping Systems.
- Describe common bookkeeping systems in dentistry.
- Demonstrate the technique for making bookkeeping entries (computer, pegboard).
- Describe the components of a pegboard system Other Financial Systems .
- Demonstrate a simulated collection call.
- Develop a written credit policy for the dental office.
- Show awareness for the legal limits of collections.
- Demonstrate simulated client financial arrangements.
- Accurately prepare a bank statement.
- Demonstrate reconciliation of a bank statement.
- Compare and contrast an itemized vs. non-itemized statement.

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### 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

Upon successful completion of this course, the student should be able to:

- Define the meaning of multi-handed dentistry, and its advantages to patients, dentists, and assistants.
- Recall and use principles and concepts surrounding aseptic sterilization as it relates to current health and safety standards.
- 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.
- 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.
- Apply teamwork strategies that will demonstrate successful work habits.
- Implement good organizational and time management skills.
- Recall and apply ethics and jurisprudence awareness as discussed in Dental Law and Ethics.
- Discuss principles, procedures and personal behaviors designed to achieve sterilization and optimum infection control in the dental operatory.
- Describe products used and list the steps taken to ensure sterilization of instruments and test sterilizers for microbial kill.
- 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.
- Discuss the clinical significance of communicable diseases, the modes of transmission, types, epidemiology, and vaccines.
- Use the Lane Community College Exposure Control Program to apply standard operating procedures in all clinical and laboratory activities.
- 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.

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### 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

Upon successful completion of this course, the student should be able to:

- List in writing and define the eight dental specialties.
- Identify items needed for common specialty procedures.
- Apply the principles and concepts covering: pharmacology, pediatrics,



oral surgery, pain control, prosthodontics, orthodontics, endodontics, periodontics, operative dentistry.

- Describe and demonstrate the assistant's role during amalgam, composite or crown preparation.
- Chart common conditions in general dentistry and dental specialties.
- Punch, place, and remove rubber dam to stated criteria.
- Locate placement sites for topical anesthetic.
- Demonstrate Endodontic file measurement and the drying of pulp canals with paper points.
- Demonstrate thorough proper sterile techniques and knowledge of OSHA regulations.
- 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 separator.

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### 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:

- Define terminology as presented in this course.
- Understand ionizing radiation and basic principles of x-ray generation.
- Understand factors influencing image formation and image receptors.
- Know the biological effects of radiation.
- Know radiological health protection and safety measures.
- Know radiographic film composition.
- Understand legal issues and guidelines related to dental radiology.
- Know dark room procedures including: film processing, maintenance of darkroom and darkroom equipment, quality assurance and record keeping.
- Demonstrate knowledge of quality assurance procedures.
- Know normal radiographic landmarks, artifacts and shadows as they appear on film.
- Know appropriate radiographic surveys, film type and record keeping.
- Know intraoral radiographic techniques including paralleling and bisecting.
- Know correct film mounting procedures.
- Know correct film viewing techniques.
- Show understanding of appropriate aseptic techniques in the radiology operatories and darkroom.
- Have an understanding of radiation as a benefit and hazard to society.
- Know common radiographic errors (exposure and darkroom).
- Understand the concept of informed consent prior to taking radiographs.
- Demonstrate the technique and understand the indications for use of the vertical bitewing radiograph.
- Know Lane Community College's radiation policies.

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### 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

Upon successful completion of this course, the student should be able to:

- Define terminology as presented in this course.
- Understand ionizing radiation and basic principles of x-ray generation.
- Understand factors influencing image formation and image receptors.
- Know the biological effects of radiation.
- Know radiological health protection and safety measures.
- Know radiographic film composition.
- Understand legal issues and guidelines related to dental radiology.
- Know dark room procedures including: film processing, maintenance of darkroom and darkroom equipment, quality assurance and record keeping.
- Demonstrate knowledge of quality assurance procedures.

- Know normal radiographic landmarks, artifacts and shadows as they appear on film.
- Know appropriate radiographic surveys, film type and record keeping
- Know intraoral radiographic techniques including paralleling and bisecting and digital.
- Know correct film mounting procedures for both chemical and digital radiography.
- Know correct film viewing techniques.
- Show understanding of appropriate aseptic techniques in the radiology operatories and darkroom.
- Have an understanding of radiation as a benefit and hazard to society.
- Know common radiographic errors (exposure and darkroom).
- Understand the concept of informed consent prior to taking radiographs.
- Demonstrate the technique and understand the indications for use of the vertical bitewing radiograph.
- Demonstrate knowledge of the equipment, benefits and procedures used in digital radiography.
- Understand the different types of extra-oral radiographs.
- Demonstrate knowledge of exposing, developing and interpreting panographs.
- Understand and utilize the concepts of dealing with special needs clients.
- Know Lane Community College's radiation policies.

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## Dental Hygiene

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### 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. May be offered online.

**Prerequisite:** Admission to the Dental Hygiene program.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Identify and recognize clinical significance of communicable diseases, modes of transmission, types, microbiology, epidemiology and vaccines.
- Identify bloodborne pathogens and chemical hazards presenting a danger in the dental environment.
- Select and use principles, procedures, and personal behaviors designed to achieve prevention of transmissible disease.
- Demonstrate use of exposure control protocols to achieve infection control in the oral health care environment.
- Identify products and procedures used in instrument reprocessing and list the steps taken to perform sterilization protocols and biological testing of sterilizers.
- Recognize and differentiate the epidemiology, symptoms and modes of transmission for hepatitis diseases, HIV+, AIDS, Tuberculosis and common diseases encountered in the dental environment.
- Apply standard operating procedures from the LCC Exposure Control Plan to simulated clinical and laboratory activities.
- Demonstrate knowledge of the application of Occupational Safety and Health Administration regulations to the practice of dentistry and HIPPA Privacy Standards and Guidelines.
- Establish and maintain an environment: a. that protects against environmental hazards b. uses standardized clinical protocols and c. protects against transmission of disease.
- 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.

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### DH 113 - Dental Anatomy and Histology

2 Credit(s)

The study of dental histology and morphology of the teeth and surrounding soft tissues. May be offered online.

**Prerequisite:** Admission to the Dental Hygiene program.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Define and recognize epithelium arrangement and connective tissue.
- Define the function of the four layers of epithelium and discuss their locations.
- Describe the development and components of enamel, dentin, pulp, and cementum.
- Define the periodontal ligament, listing all fibers.
- Identify the embryonic structures, their origins and future oral facial structures.
- Describe the process of embryonic development of oral facial structures.
- Identify the brachial arches of embryonic development and their corresponding future structures.
- Explain the growth periods of the teeth.
- State accurate eruption dates of all teeth.
- Identify the different types, functions, and anatomic parts of each tooth.
- Identify the points, angles and planes of individual teeth and their relationship to occlusion.
- Identify all teeth by using the universal numbering system.
- Duplicate important anatomy of all individual permanent teeth.

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#### DH 118A - Clinical Dental Hygiene 1

4 Credit(s)

Introduction to basic instrumentation, assessment procedures, and clinical protocol for dental hygiene care. May be offered online.

**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:

- Relate the history of dental hygiene to the concept of preventive dentistry and describe the dental hygienist's scope of practice.
- Discuss the methods of plaque control presented in class, and state their applicability to client care.
- 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.
- List and discuss the dental deposits discussed in class, the steps in deposit formation, and their effect on the oral tissues.
- Define three instrumentation skills which dental hygienists perform and identify the instruments appropriate for each skill.

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#### DH 118B - Clinical Dental Hygiene 1 Lab

2 Credit(s)

Clinical lab required for DH 118A.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Name, locate and demonstrate proper utilization of the parts of the dental unit.
- Practice and demonstrate proper client positioning.
- Practice and demonstrate proper operator and dental light positioning.
- Demonstrate disinfecting the dental unit and light, and place appropriate barriers prior to client seating.
- Identify and verbalize all oral landmarks listed on Basic Clinical Evaluation (BCE).
- Record and compute plaque indices.
- Utilize compressed air for increased visibility.
- Apply disclosing solution using the direct method, covering only the intraoral area desired.
- Interview a client and record accurately all parts of a medical history.
- Demonstrate the mouth mirror for indirect vision, retraction, and illumination.
- Demonstrate proper pen grasp with all instruments issued.
- Demonstrate appropriate fulcrums and body positions for use with all instruments.
- Demonstrate correct instrument adaptation, angulation, and insertion for working and exploration strokes with all instruments.
- Describe, demonstrate, and compare working and exploratory strokes with all instruments.
- Demonstrate correct adaptation of the ODU 11-12 explorer to all areas of the mouth.
- Demonstrate the correct adaptation of the periodontal probe on six surfaces of each tooth in the mouth.

- 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.
- 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.
- Utilize correct dental terminology in all clinical activities.
- Evaluate self in methods of plaque control removal using the techniques presented in class with a goal of attaining 90% plaque free.
- Demonstrate strict adherence to all methods for the prevention of disease transmission.

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#### 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. May be offered online.

**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:

- Utilize dental terminology presented within all courses in the Dental Hygiene program during clinical activities. When written, the terminology must be spelled correctly.
- Utilize the dental hygiene process of care –assessment, diagnosis, planning, implementation, and evaluation when providing patient care.
- 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.
- 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.
- Discuss legal and ethical responsibilities of the hygienist.
- Demonstrate accuracy in appointment records and clinical procedures as presented in the Policies and Procedures Manual.
- Identify the tooth discolorations and dental stains presented in class, methods, and polishing equipment appropriate for removal.
- Identify and describe the applicability of a variety of oral physiotherapy devices and dental products.
- 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.
- Demonstrate correct instrument insertion, adaptation, and angulation for working and exploratory strokes using all instruments assigned in pre-clinical labs.
- Describe and identify the etiology and classifications of caries.
- Demonstrate strict adherence to all methods for the prevention of disease transmission presented in classes.
- Recognize deposit retention factors and plan treatment for the prevention of deposit accumulation.
- Utilize principles of child client management discussed in class.

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#### DH 119B - Clinical Dental Hygiene 2 Lab

4 Credit(s)

Clinical lab required for DH 119A.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Utilize dental terminology presented within all courses in the Dental Hygiene program during clinical activities. When written, the terminology must be spelled correctly.
- Utilize the dental hygiene process of care –assessment, diagnosis, planning, implementation, and evaluation when providing patient care.
- 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.
- 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.

- Recognize the risks and benefits of caries prevention and remineralization protocols, with implementation following dental diagnosis by the clinical dentist.
- Demonstrate the legal and ethical responsibilities of the hygienist.
- Demonstrate accuracy in appointment records and clinical procedures as presented in the Policies and Procedures Manual.
- Identify the tooth discolorations and dental stains and select and apply the methods and appropriate equipment appropriate needed for removal.
- Identify and describe the applicability of a variety of oral physiotherapy devices and dental products.
- 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.
- Demonstrate correct instrument insertion, adaptation, and angulation for working and exploratory strokes using all instruments assigned in pre-clinical labs.
- Describe and identify the etiology and classifications of caries.
- Demonstrate strict adherence to infection control protocols.
- Recognize deposit retention factors and plan treatment for the prevention of deposit accumulation.
- Utilize principles of child client management discussed in the co-requisite course.
- 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.
- Describe and identify the etiology and classifications of caries.
- Demonstrate strict adherence to infection control protocols.
- Recognize deposit retention factors and plan treatment for the prevention of deposit accumulation.
- Utilize principles of patient management discussed in the corequisite course.

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### 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. May be offered online.

**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:

- Recognize and identify specific organisms microscopically which are present in health and in disease.
- Identify and describe the four microbiologic risk factors.
- Utilize the microscope specimen for patient motivation.
- Describe the learning process.
- Discuss how health attitudes and value systems are developed.
- Describe the learning ladder continuum.

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### DH 120B - Clinical Dental Hygiene 3 Clinic Lab

4 Credit(s)

Clinical lab required for DH 120A.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Utilize dental terminology presented within all courses in the Dental Hygiene program during clinical activities. When written, the terminology must be spelled correctly.
- Utilize the dental hygiene process of care –assessment, diagnosis, planning, implementation, and evaluation when providing patient care.
- Demonstrate strategies of used to motivate patient to make oral health changes.
- Recognize and assess the nutritional needs of the patient and its relationship to oral health.
- 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.
- 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.
- Recognize the risks and benefits of caries prevention and remineralization protocols, with implementation following dental diagnosis by the clinical dentist.
- Demonstrate the legal and ethical responsibilities of the hygienist.
- Demonstrate accuracy in appointment records and clinical procedures as presented in the Policies and Procedures Manual.
- Identify the tooth discolorations and dental stains and select and apply the methods and appropriate equipment appropriate needed for removal.
- Identify and describe the applicability of a variety of oral physiotherapy devices and dental products.

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### 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. May be offered online.

**Prerequisite:** Admission to Dental Hygiene program

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Describe the steps involved and materials used in the construction of a denture.
- Summarize the procedures and materials used for temporary relining of a denture.
- Describe and demonstrate removable prosthetic dental appliance cleaning and maintenance procedures.
- Describe the uses , chemical compositions, properties and procedures for cements, bases and liners.
- Demonstrate cementation of a temporary crown.
- Demonstrate placement of a temporary restoration
- Demonstrate the mixing and placement of calcium hydroxide liner.
- Demonstrate the mixing of Zinc Phosphate Cement to luting and to base consistency.
- Demonstrate mixing of a temporary Glass Ionomer cement.
- Describe functions, properties, placement and client care instructions for periodontal dressings.
- Demonstrate basic ability to place and remove a periodontal dressing.
- Describe the rationale for periodontal surgical procedures.
- Discuss how surgical suturing materials and needles are classified.
- Demonstrate basic ability to place and remove sutures.
- 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.
- 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.
- Demonstrate basic ability to mix, pour and trim a gypsum cast.
- Describe the procedures and materials used for fabrication of fixed indirect restorations and prostheses.
- Demonstrate knowledge of professional whitening methods, both in-office and at-home.
- Demonstrate basic ability to fabricate dental whitening trays.
- Demonstrate basic ability to remove orthodontic resins from extracted teeth.

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### 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. May be offered online.

**Prerequisite:** Admission to Dental Hygiene program

#### Learning Outcomes

Students who complete this course will be able to:

- Recognize physical, mental, medical, social, and special needs of people who are medically compromised.
- Understand the demographics, etiology, limitations, and diseases associated with medically compromised, developmental disabilities and significant physical limitation patients.
- Adapt procedures and treatment plans to meet the needs of dental hygiene special needs patients.



- Become familiar with medications, oral manifestations and emergencies in the management of special needs conditions.
- Research and develop effective strategies for providing dental hygiene care to the medically compromised, developmental disabled and special needs patient.

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#### 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. May be offered online.

**Prerequisite:** Admission to Dental Hygiene program

**Corequisite:** DH 220B

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Identify advanced instrumentation techniques, instrument characteristics, selection, and application to the moderate to advanced periodontal patient care.
- Identify and describe characteristics of root morphology for all permanent dentition.
- Review bloodborne pathogens and infection control in the workplace.
- Identify the dental specialties recognized by the American Dental Association and discuss the scope of practice and educational requirements for each specialty.
- Understand supportive treatment procedures in regard to dental hypersensitivity and desensitizing agents.
- Identify proper ergonomic techniques including stretching, indirect vision, alternative positions, loupes and proper lighting.
- Identify and discuss health issues for women; to include nutrition, pregnancy, hormone related conditions, medications, osteoporosis and bisphosphonates

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#### DH 220B - Clinical Dental Hygiene 4 Lab

5 Credit(s)

Clinical lab required for DH 220A

**Corequisite:** DH 220A

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Identify advanced instrumentation techniques, instrument characteristics, selection, and application to the moderate to advanced periodontal patient care.
- Identify and describe characteristics of root morphology for all permanent dentition.
- Review bloodborne pathogens and infection control in the workplace.
- Identify the dental specialties recognized by the American Dental Association and discuss the scope of practice and educational requirements for each specialty.
- Understand supportive treatment procedures in regard to dental hypersensitivity and desensitizing agents.
- Identify proper ergonomic techniques including stretching, indirect vision, alternative positions, loupes and proper lighting.
- Identify and discuss health issues for women; to include nutrition, pregnancy, hormone related conditions, medications, osteoporosis and bisphosphonates

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#### 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. May be offered online.

**Prerequisite:** Admission to Dental Hygiene program

**Corequisite:** DH 221B

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Recognize the importance of applying principles of communication when implementing nonsurgical periodontal therapy.
- Value self-care education and the dental hygiene case presentation (consultation).
- Identify strategies to enhance a patient education and skill development.
- Define the role of the dental hygienist during a dental emergency appointment.

- Analyze the conditions and needs of the advanced periodontal patient and dental hygiene services for these patients.
- Recognize and identify appropriate dental hygiene service codes for dental hygiene clients following ADA Current Dental Terminology guidelines.
- Identify special considerations for the geriatric patient.
- 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

6 Credit(s)

Clinical Lab required for DH 221A

**Corequisite:** DH 221A

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Recognize the importance of applying principles of communication when implementing nonsurgical periodontal therapy.
- Value self-care education and the dental hygiene case presentation (consultation).
- Identify strategies to enhance a patient education and skill development.
- Define the role of the dental hygienist during a dental emergency appointment.
- Analyze the conditions and needs of the advanced periodontal patient and dental hygiene services for these patients.
- Recognize and identify appropriate dental hygiene service codes for dental hygiene clients following ADA Current Dental Terminology guidelines.
- Identify special considerations for the geriatric patient.
- 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 222A - Clinical Dental Hygiene 6

2 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. May be offered online.

**Prerequisite:** Admission to Dental Hygiene program

**Corequisite:** DH 222B

#### Learning Outcomes

Students who complete this course will be able to:

Identify advanced instrumentation instrument selection and application to modern to advanced periodontal care

- Identify and use the PSR Probe.
- Manage electronic records with accuracy and completeness.
- Recognize, prevent or assist with, manage and document medical emergencies.
- Use, recognize, select and apply service codes for electronic billing while applying ADA Current Dental Terminology guidelines.
- Document treatment plan, service codes, case type and periodontal stages and grades.
- Apply concepts of older client care through competent care, recall and referral.
- Prepare for licensing, employment and document preparation supporting dental hygiene professional needs.
- 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:

- Identify advanced instrumentation instrument selection and application to modern to advanced periodontal care
- Identify and use the PSR Probe.
- Manage electronic records with accuracy and completeness.
- Recognize, prevent or assist with, manage and document medical emergencies.
- Use, recognize, select and apply service codes for electronic billing while applying ADA Current Dental Terminology guidelines.
- Document treatment plan, service codes, case type and periodontal stages and grades.

- Apply concepts of older client care through competent care, recall and referral.
- Prepare for licensing, employment and document preparation supporting dental hygiene professional needs.
- Document professional communication and understanding of the DH Process of Care

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#### 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. May be offered online.

**Prerequisite:** Admission to Dental Hygiene program

##### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Identify advanced instrumentation instrument selection and application to modern to advanced periodontal care.

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#### 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. May be offered online.

**Prerequisite:** Admission to Dental Hygiene program

##### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Identify and use the PSR Probe.

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#### 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 N2O/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. May be offered online.

**Prerequisite:** Admission to Dental Hygiene program

##### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Manage electronic records with accuracy and completeness.

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#### 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 employment opportunities for the dental hygienist. May be offered online.

**Prerequisite:** Admission to Dental Hygiene program

##### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Recognize, prevent or assist with, manage and document medical emergencies.

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#### 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. May be offered online.

**Prerequisite:** Admission to Dental Hygiene program

##### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Use, recognize, select and apply service codes for electronic billing while applying ADA Current Dental Terminology guidelines.

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#### 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. May be offered online.

**Prerequisite:** Admission to Dental Hygiene program

##### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Document treatment plan, service codes, case type and periodontal stages and grades.

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#### DH 243A - Oral Radiology

2 Credit(s)

Co-requisite: DH 244A and DH 244B are taken together and require simultaneous registration. 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. May be offered online.

**Prerequisite:** Admission to Dental Hygiene program

**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:

- Apply concepts of older client care through competent care, recall and referral.

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#### DH 243B - Oral Radiology

1 Credit(s)

Clinical Lab. Lab required for DH 243A.

##### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Prepare for licensing, employment and document preparation supporting dental hygiene professional needs.

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#### DH 244A - Oral Radiology

1 Credit(s)

Continuation of Oral Roentgenology 1. Radiologic interpretive knowledge and skills are introduced as a diagnostic aid to assist with dental hygiene diagnoses. 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. May be offered online. Lab required for DH 244A.

**Prerequisite:** Admission to Dental Hygiene program. Continuation of DH 243A - Oral Radiology.

##### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Document professional communication and understanding of the DH Process of Care.

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#### DH 244B - Oral Radiology

1 Credit(s)

Clinical Lab required for DH 244A.

##### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Understand the purpose and use of panoramic imaging and utilize this knowledge on live clients.
- Understand the principles and application of extra-oral imaging, including types and composition of extra-oral film.
- Discuss the use and rationale of vertical bitewing exposures.
- Learn the basic skills required for radiographic interpretation of dental caries.
- Learn the basic skills required for radiographic interpretation of periodontal disease.
- Learn the basic skills required for radiographic interpretation of pulpal and periapical lesions.
- Learn the basic skills required for radiographic interpretation of developmental disturbances and lesions associated with bone.
- Understand the principles of digital and newer imaging systems as well as utilizing digital radiography and dental practice management systems.
- Learn the basic skills required to expose radiographs on pedodontic and partially/fully edentulous clients.
- Understand the importance of quality assurance, and practice radiologic health and safety measures.

- Understand how to maintain processing equipment to consistently produce quality radiographs.
- Understand and utilize film and PID placement using both the paralleling and bisection of the angle techniques.
- Understand the concept of patient management
- Demonstrate accurate recording of radiographic information in client's record.
- Demonstrate strict adherence to all methods for the prevention of disease transmission presented.
- Know Lane Community College's radiation policies.

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### 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. May be offered online.

**Prerequisite:** Admission to Dental Hygiene program

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Understand drug mechanisms of action, pharmacokinetics, and pharmacologic effects.
- Know specific drug classifications including therapeutic uses, adverse reactions and contraindications.
- Read and understand drug prescriptions and ability to write prescriptions specific to the practice of dental hygiene.
- 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.
- Understand the parasympathetic and sympathetic nervous systems, including drugs in each category.
- Recognize drugs used for pain control (including local anesthesia and nitrous oxide), their indications, drug interactions and adverse effects.
- 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.
- Recognize oral conditions as a side effect of drug use; identification of drugs used in alleviating oral problems.
- Know actions, drug interactions and concerns of common herbal and nutritional supplements seen in the dental practice.
- Understand and demonstrate ability to use appropriate reference material when needed.
- Find and interpret new information about drugs.

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### 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. May be offered online.

**Prerequisite:** Admission to Dental Hygiene program

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Describe the anatomy, histology, and clinical characteristics of the tissues of the periodontium.
- Describe, identify, and classify bacteria (microbiology) associated with the periodontal diseases and their characteristics that contribute to their virulence.
- 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.
- Identify the pathogenesis of the gingival diseases and periodontal diseases and their application to the classification of periodontal disease (AAP).
- 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.

- 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.
- 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.
- Describe the steps in motivation of the compliant and non-compliant periodontal patient.
- Describe the goals, considerations, and phases of treatment planning for dental hygiene therapy.
- Describe the informed consent and consultation appointment for the periodontal patient.
- Identify treatment evaluation and referral methods employed with the periodontal patient.
- Identify and describe periodontal maintenance and referral procedures.
- Describe antibiotic and antimicrobial protocols in the treatment of periodontal disease.

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### DH 271 - Periodontology 2

1 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

- Describe and discuss the effects of restorative dentistry to the periodontium.
- Describe and identify periodontal emergencies, assessment procedures, and treatment.
- Define the role of the dental hygienist in detection of occlusal abnormalities and jaw dysfunction.
- Discuss and explain temporomandibular joint disorders and treatment for these conditions.
- Discuss the systemic risk factors that affect and amplify periodontal conditions and treatment modifications, including interprofessional collaboration.
- Describe the effect of cardiovascular disease, endocrine disturbances, infectious diseases, dermatologic diseases, oral cancer blood dyscrasias, and tobacco use on periodontal disease.
- Explain and describe periodontal surgeries for periodontal defects.
- Understand peri-implant health and diseases and the clinical guidelines for maintenance of patients with dental implants.
- Describe and select appropriate assessment and supportive periodontal procedures for implant patients.
- Discuss the rationale, goals and procedures for gingival curettage.
- Discuss the rationale, goals and procedures for Laser Assisted Periodontal Therapy and describe other procedures performed with a diode laser for other oral conditions.
- Recognize the common forms of periodontal diseases that affect the pediatric patient.
- 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.
- Evaluate and select periodontal research that supports periodontal procedures performed by dental hygienists.
- Define Evidence-Based dental literature and understand foundational elements of evidence-based practice.

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### 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. May be offered online.

### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Understand and demonstrate safety with amalgam restorations
- Identify anatomical characteristics of posterior teeth
- Understand advantages and demonstrate rubber dam application
- Identify when matrix and wedge is required and properly assemble and place.
- Discuss etiology of decay process, cavity classification, and cavity preparation.
- Demonstrate ability to place and carve amalgam restorations.

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### 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. May be offered online with onsite lab.

**Prerequisite:** Admission to Dental Hygiene program

### Learning Outcomes

Students who complete this course will be able to:

- Identify anatomical characteristics of anterior teeth.
- Understand differences of composite restorative materials and bonding materials, bases and liners.
- Identify and select proper burs for tooth preparation, restoration finishing and amalgam polish.
- Properly select and place anterior and posterior matrix systems for composite placement.
- Properly place and finish anterior and posterior composite restorations on typodont.
- Demonstrate ability to place and carve amalgam and composite restorations on patients.

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### 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. May be offered online with onsite lab.

### Learning Outcomes

Upon successful completion of this course, the student will:

- Review and update patient medical history and restorative treatment plan.
- Accurately place, carve and finish typodont restorations.
- Accurately place, carve and finish restorations on clinical patients.
- Understand and demonstrate restorative care and anesthesia for children

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## Diesel and Heavy Equipment

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### DS 154 - Heavy Duty Braking Systems

1-12 Credit(s)

This course covers technical information and shop projects necessary for the practical application and understanding of theories and principles used in the operation, diagnosis, testing, failure analysis, and repair of heavy duty braking systems. Technical information and shop projects to apply and understand theories and principles include: fundamentals of braking and applied preventive maintenance program - trucks/tractors; disk/cam brake systems; anti-lock air brake systems; heavy duty wedge brakes; power assist units; truck/tractor air brake system components; and diesel engine and exhaust brakes and retarders in on and off highway heavy duty equipment.

### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Explain basic electrical system troubleshooting.
- Explain shop safety concerns.
- Explain basic hydraulic brake system operation.
- Perform a hydraulic brake system overhaul.
- Explain system pressures and force.
- Explain system troubleshooting.

- Explain vacuum booster operation.
- Explain hydro-booster operation.
- Explain power brake operation.
- Explain boost system pressures.
- Explain boost system troubleshooting.
- Perform an air brake overhaul.
- Perform an S-cam type brake adjustment.
- Explain disk operation.
- Explain brake system balance.
- Perform a wheel bearing adjustment.
- Explain wedge brake operation.
- Explain tube-type brake operation.
- Explain S-cam type brake troubleshooting.
- Explain air compressor operation and troubleshooting.
- Explain air brake application valve operation and troubleshooting.
- Explain air dryer operation and troubleshooting.
- Explain all "Pre-121" system air valves.
- Explain all "121" system air valves.
- Explain all trailer system air valves.
- Explain anti-lock brake systems.
- Explain park brake system.
- Perform air brake system troubleshooting.
- Explain engine brake operation and troubleshooting.
- Perform an engine brake overhaul and adjustment.
- Explain hydraulic retarder system operation and troubleshooting.
- Perform hydraulic retarder system check.
- Explain the operation of an exhaust brake.

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### 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 principles 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, 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, manually controlled hydraulic systems, pilot controlled hydraulic systems and electronically controlled hydraulic systems.

### Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Demonstrate the use of testing equipment and skills required to diagnose hydraulic problems, making it possible to troubleshoot and repair problems found.
2. Identify the importance of the heavy equipment power train components and explain the uses and applications of hydraulic units and how or why we need and use them.
3. Describe the operation of hydraulic components as related to use on heavy equipment and industrial applications.

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### DS 158 - Heavy Equipment Chassis and Power Trains

1-12 Credit(s)

This course covers technical information and shop projects necessary for the practical application and understanding of theories and principles used in the 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; standard transmission; on and off highway automatic transmissions; fluid couplings and torque converters; drive lines; front and rear drive carrier units; heavy duty tires, wheels, rims, 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:

- Perform a truck frame inspection.
- Perform an air ride system adjustment and inspection.
- Perform a spring suspension inspection.
- Check and explain steering geometry.
- Explain how shock absorbers work.
- Perform and explain frame repairs.

- Explain basic electrical circuits.
- Adjust steering gear.
- Troubleshoot steering systems.
- Explain hydrostatic steering systems.
- Explain power steering operation.
- Perform an axle inspection.
- Perform a bearing adjustment.
- Perform a wheel seal service.
- Explain tire and wheel design.
- Explain fifth wheel operation.
- Perform a trailer inspection.
- Explain clutch operation.
- Perform a clutch adjustment.
- Explain clutch troubleshooting.
- Explain how to time a twin-countershaft transmission.
- Explain transmission operation.
- Perform a transmission overhaul.
- Explain air system operation.
- Explain transmission troubleshooting.
- Explain preventative maintenance checks.
- Explain two-speed axle operation.
- Explain differential operation.
- Explain inter-axle differential operation.
- Explain differential lock operation.
- Perform a carrier overhaul.
- Explain axle troubleshooting.
- Explain planetary drive axles.
- Explain dive line operation.
- Perform drive line inspection.
- Perform drive line service.
- Explain drive line troubleshooting.
- Explain undercarriage components.
- Explain undercarriage maintenance.
- Check track pitch.
- Check and adjust track tension.
- Explain the differential steer system.
- Explain steering, clutch, and brake adjustment.
- Explain final drive troubleshooting.

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### DS 256 - Diesel and Auxiliary Fuel Systems

1-12 Credit(s)

This course covers technical information and shop projects necessary for the practical application and understanding of theories and principles used in the operation, diagnosis, testing, failure analysis, and repair of diesel and auxiliary fuel systems. Technical information and shop projects to apply and understand theories and principles include: alternative type fuel systems; diesel fuel systems including mechanical and electronic diesel engine controls; and diesel engine performance analysis of on and off highway current model engines.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Perform voltage drop tests.
- Perform basic electrical troubleshooting.
- Explain safety procedures for working around diesel engines.
- Explain two- vs. four-stroke cycles.
- Explain combustion chambers.
- Explain engine design considerations.
- Explain types of fuel systems.
- Explain basic governor operation.
- Explain fuel filters systems.
- Explain alternative fuel systems.
- Explain injector operation.
- Explain electronic controls.
- Explain LPG fuel systems.
- Explain basic fuel system operation.
- Perform static spill timing.
- Explain inline pump operation.
- Explain timing advance units.
- Explain governor operation.
- Perform a nozzle test.
- Explain V-MAC functions.
- Explain V-MAC system components.
- Explain V-MAC diagnostic tools.

- Adjust fuel settings - 3406B.
- Set timing - static - 3406B.
- Perform 3116 tune-up.
- Perform 3176 engine sensors test.
- Perform 3406 PEEC electrical circuits exercises.
- Explain HEUI system operation.
- Check dynamic engine timing – 3406.
- Check governor balance point - 3406.
- Explain air/fuel ratio controls.
- Explain 3176 fuel system operation.
- Explain mechanical governors.
- Perform two-stroke tune-up.
- Troubleshoot fuel system.
- Explain DDEC system controls.
- Perform DDEC tune-up.
- Perform DDEC diagnostic tests.
- Adjust Overhead – PT.
- Check engine timing – PT.
- Explain PT fuel pump and injectors.
- Perform sensors test on CELECT system.
- Explain CELECT system operation.
- Explain step timing control systems.
- Explain AFC controls.
- Explain common troubleshooting considerations.
- Explain exhaust smoke colors.
- Perform electronic engine diagnostics.
- Perform an engine dyno run.
- Check engine pressures.

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### 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 principles used in the operation, diagnosing, testing, and repair of diesel electrical systems. This includes: Electrical fundamentals as they pertain to diesel electrical systems; operation and testing of batteries and battery banks; alternators and charging systems; starters and starting systems; heavy duty electrical circuits and schematics; maintenance and repair of OEM and aftermarket electrical connectors and conductors; safety; operation and testing of electronic control systems and components; operation and testing of air conditioning systems as they are used on highway trucks, off highway trucks, agriculture equipment and construction equipment.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Demonstrate the ability to diagnose and recommend the logical repair procedures for electric circuits.
- Describe the operation of electrical components and the systems in which the components operate.
- Identify and select the proper service manuals and reference material when diagnosing and making repairs to heavy duty electrical systems.
- Demonstrate the proper use of test equipment when troubleshooting heavy duty electrical systems.
- Demonstrate the ability to diagnose and recommend the logical repair procedures for air conditioning systems.
- Demonstrate the proper use of test equipment when troubleshooting air conditioning systems.

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### 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 principles 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, rod bearings, vibration damper and flywheel; pistons, rings, and connecting rod assembly; camshaft and timing gear train; lubrication systems and lube oil; cooling systems and coolant; air intake systems; exhaust systems and emissions; hand tools used in the disassembly, reassembly and overhead adjustment, precision measuring tools; engine disassembly, reassembly, diagnosis; and troubleshooting diesel engines as they apply to "on" and "off" the highway diesel equipment.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Identify and compare the principles and operation of diesel engines and auxiliary systems and procedures involved in the maintenance and repair of the major engine components.
- Demonstrate good workmanship on diesel engines reflecting such characteristics as responsibility, reliability, and proper attitude.
- Demonstrate correct use of test equipment, measuring devices and techniques required to perform necessary repairs on diesel engines and accessories.

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### DS 260 - Lift Truck/Material Handling Equipment

1-12 Credit(s)

This course covers technical information and shop projects necessary for the practical application and understanding of theories and principles used in the operation, diagnosing, testing, and repair of lift trucks and other material handling equipment. This includes the mast/upright, transmission, diesel engine, gas engine, propane engine and electric powered lift trucks, electric controller, periodic maintenance, and schematics.

**Prerequisite:** Instructor Consent.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Demonstrate proper mast / upright operation, repair, and troubleshooting.
- Define electric lift truck operation, inspection repair, adjustment, and troubleshooting.
- Explain periodic maintenance.
- Identify and interpret schematics.

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## 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.

### DRF 137 - Architectural Plans

4 Credit(s)

Fundamentals of building materials, construction techniques, construction documents, and processes used in residential structures.

**Prerequisite:** DRF 160.

#### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Demonstrate ability to follow both national drawing standards and employer standards which differ from national standards.
- Work from sketches and notes provided by others to create correctly finished drawings.
- Research: Investigate codes and other requirements of local jurisdictions.
- Solve simple design problems at a residential scale.
- Demonstrate comfort with quantitative thinking.
- Demonstrate understanding of residential construction materials and methods.
- Demonstrate knowledge of architectural drawing standards and methods of sheet organization.

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### 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:

- Use computer-aided drafting software to create working drawings.
- Demonstrate ability to set up new drawing files independently, including layers, text and dimension styles, viewports, scales, sheet layouts, and plot setup.
- Demonstrate ability to execute commands using a variety of input methods, including keyboard commands, keyboard shortcuts, icons, and right-click menus.
- Demonstrate ability to select the most efficient methods of using and working in CAD software.

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### 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 types of structures, how structures carry loads, vectors, moment, equilibrium, and the construction of load, shear, and moment 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 and MTH 085 or instructor consent.

#### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Understand basic concepts of external forces and moments.
- Use graphical and analytical methods to add vectors.
- Understand and apply principles of equilibrium.
- Analyze forces in parts of a truss.
- Create beam load, shear, and moment diagrams.
- Be familiar with types of structures.
- Understand how various types of structures carry loads.

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### 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:** MTH 075, MTH 085, and DRF 205.

#### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Understand basic concepts of internal stresses.
- Solve for stress, force, or area when other 2 are known.
- Understand basic concepts of material properties.
- Use strain equations to solve for strain, deformation, length, stress.
- Calculate expansion due to temperature change.
- Be familiar with basic concepts of metallurgy.
- Use modulus of elasticity to solve for variety of unknowns.
- Calculate centroids for planar shapes and centers of gravity for three-dimensional shapes.
- Use moment of inertia and section modulus to analyze flexural stress in simple beams.
- Select appropriate beam members for a given load.
- Calculate deflection of a given beam under a given load.
- Select column members adequate to resist buckling.

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### 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:

- Demonstrate ability to follow both national drawing standards and employer standards which differ from national standards.
- Demonstrate understanding of contracting and project delivery process.
- Demonstrate understanding of and competence in project management and scheduling.
- Demonstrate knowledge of standards for construction documents including drawing standards, specifications, and CSI systems.
- Demonstrate comfort with quantitative thinking.
- Demonstrate ability to work collaboratively using group processes to plan and solve problems.

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### 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

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### DRF 220 - Building Information Modeling

4 Credit(s)

DRF 220 is an introduction to Autodesk Revit and will allow students to gain an understanding of 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.

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### 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:

- Demonstrate ability to follow both national drawing standards and employer standards which differ from national standards.
- Develop ability to visualize 3D object from 2D drawing; visualize multiple viewing directions; and translate 3D object into 2D drawing.
- Demonstrate familiarity with materials, methods, and vocabulary of fabrication, machining, and other processes.
- Demonstrate understanding of reasons for tolerances; be able to select appropriate tolerance ranges for surface finishes and clearances and fits.
- Demonstrate understanding of basic principles of geometric dimensioning and tolerancing: basic dimensions, MMC, datums, flatness, angularity, position, and runout.
- Develop basic measurement and reverse-engineering skills.
- Understand reasons for and principles of basic document control procedures.
- Work methodically from redline drawings supplied by others
- Demonstrate comfort with quantitative thinking.
- When faced with a design problem, research ways similar problems have been solved by others.
- Solve design problems at a technician or paraprofessional level.

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### DRF 236 - Machine Elements

4 Credit(s)

A study of components used in machine design including materials, weldments, fasteners, keys, linkages, gears, roller chain, V-belt drives, guards, and electric motors.

**Prerequisite:** DRF 121.

#### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Demonstrate familiarity with materials: Metal Thermoplastic Structural steel.
- Select appropriate weld types for given connections and apply weld symbols correctly.
- Demonstrate knowledge of standards for threaded and nonthreaded fasteners.
- Use tables and handbooks to find design data.
- Find dimensions and other data for fasteners.
- Find dimensions and other data for keys and keyways.
- Find V-belt and roller chain design data.
- Translate design concepts into virtual and physical models, building neural links between mental concepts and physical reality and developing visualization skills.
- Demonstrate understanding of cam and linkage kinematics.
- Demonstrate knowledge of gear geometry and gear train types.
- Demonstrate comfort with quantitative thinking: Gears V-belt and roller chain drives.
- Demonstrate basic understanding of mechanisms.
- 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.

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### 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:

- Demonstrate understanding of the concepts of parametric, feature-based solid modeling.

- Use solid modeling software to create parts and assemblies.
- Demonstrate an understanding of the use of constraints in creating parts and assemblies.
- Demonstrate ability to create and print drawing views.

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## Early Childhood Education

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### 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 healthy and safety through developmentally appropriate practices. Recognizing/Reporting Child Abuse/Neglect required to pass. May be offered online.

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### 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. This course may be offered online.

**Prerequisite:** WR 115 is recommended.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Demonstrate the skills to carry out and record the details of objective observations for a variety of purposes.
- Explain various types of observational techniques and the values of each.
- Demonstrate a better understanding of children's behavior through direct observations.
- Describe the importance of observation skills for evaluating the growth and behavior of young children.
- Utilize observation experiences to enhance personal development and learning.

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### 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:

- Describe and understand some of the characteristics of the person who works successfully with young children.
- Describe and understand the general characteristics, qualities and philosophies of different types of programs for preschool aged children.
- Describe Developmentally Appropriate Practice and quality indicators.
- Describe what a philosophy of early childhood education is made up of and identify several elements of philosophy in local Early Childhood Education centers.
- Describe the benefits of play for young children.
- Describe how to set up an Early Childhood classroom environment.
- Describe the long term benefits of preschool education.
- 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.
- 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.
- Describe and understand the importance of being a professional in the Early Childhood field.
- 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.
- Describe and understand some of the major trends in the field of early childhood education.

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### 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, the student should be able to:

- Express and understand the use of developmentally appropriate guidance

techniques and demonstrate this understanding in assignments, exams and discussions in class.

- Demonstrate and apply developmentally appropriate guidance through action in real-life guidance situations with children (and in the lab school if ECE is one's major).
- Explain and understand the difference between guidance and punishment.
- Explain and demonstrate how to ensure a reasonable and appropriate daily routine for young children.
- Demonstrate the knowledge of reasonable and developmentally appropriate expectations for children by age difference.

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### **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, the student should be able to:

- Describe and understand what creativity and aesthetic development look like for preschool age children.
- Describe and understand the stages that young children move through when doing art.
- Demonstrate the ability to introduce a variety of appropriate art media to young children.
- Demonstrate the ability to give examples of appropriate 2 dimensional and 3 dimensional art projects for preschool age children.
- Demonstrate the ability to choose high quality, suitable children's preschool picture books and demonstrate the ability to name some authors and illustrators of picture books for young children.
- Demonstrate the ability to read a picture book out loud in an engaging and developmentally appropriate manner and describe and understand the value of storytelling and the use of a flannel board.
- Describe and understand some of the fundamentals of developmentally appropriate music exposure for young children.
- Demonstrate the ability to use methods that encourage children to participate in music, rhythms, fingerplays, creative dance and games.
- Describe and understand methods, ideas and materials that introduce dramatic play and blocks to young children.
- Demonstrate the ability to present cooking activities to young children.
- Demonstrate the ability to find resource material for all creative activities covered in this course.

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### **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. Offered online.

#### **Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Examine developmental learning theories and reflect upon their implementation in guiding children's development.
- Explore basic principles within a play-based, emergent approach to curriculum planning.
- To explain the philosophy and practice of a constructivist, Reggio inspired approach to curriculum planning.
- Identify stages of play and summarize their specific characteristics.
- Develop appropriate goals and developmental objectives for preschool children and programs based on observation.
- Plan a curriculum including specific kinds of learning opportunities based on a developmental model of early education.

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### **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. This class may be offered online.

#### **Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Identify specific developmental stages and issues as related to the newborn.

- Identify developmental characteristics and developmental needs of infants and toddlers in the areas of physical, intellectual, emotional, social and language development.
- Define technical terms related to infant and toddler development.
- Select proper care techniques for infants and toddlers at different developmental levels.
- Safety, health, sleep, feeding and toilet training issues are discussed.
- Describe parent/caregiver roles in caring for and nurturing infants and toddlers

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### **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:

- To develop appropriate goals for preschool children and programs based on observation.
- To plan a curriculum including specific kinds of learning opportunities based on a developmental model of early education.
- To construct teaching materials supporting specific methods and plans.
- To analyze one's own teaching experience and goals, then match planning to philosophy of teaching and educational practice.
- To explore a variety of STEM teaching methods and goals for young children.
- To summarize and explore basic outdoor children's games.

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### **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. May be offered online.

#### **Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Comprehend the value of and goals for involving parents in early education programs.
- Develop comprehensive communication skills, both written and oral.
- Develop a deeper understanding of parent/family needs and how the child care teacher/Center can help meet those needs.
- Explore various types of parent meetings and family/parent involvement.
- Comprehend the value of school policies & regulations.
- Develop an understanding of how to plan for and carry out an effective, developmentally appropriate parent conference.

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### **ECE 240 - Supervised Student Teaching-LCC Child-Care Center**

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. This is work experience in the LLC child-care center. Students learn to demonstrate consistent appropriate guidance and plan and carry out developmentally appropriate curriculum. Includes a one hour seminar and nine hours of student teaching each week.

#### **Learning Outcomes**

Upon successful completion of this course, the student should be able to:  
Choose effective positive guidance techniques to use with a variety of children.  
Use observations to assess the progress of young children and propose emergent curriculum plans to support learning.  
Analyze elements required in creating a successful Circle Time with young children.  
Evaluate small group activities and learning centers that promote playful inquiry and discovery.

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### **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:

- Choose suitable equipment and materials for infants and toddlers.
- Plan quality, and developmentally appropriate environments for infants and toddlers.
- Identify state rules and regulations which govern the certification of infant and toddler centers.
- Discuss competencies for caregivers in quality infant and toddler programs.
- Demonstrate an understanding of infant and toddler learning by planning curriculum, based on observation, for this age child.

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## 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 should 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.

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## 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. May be offered online.

## Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Describe and explain program planning concepts in child care settings.
- Identify organizational structures of child care settings.
- Evaluate budgeting systems in the child care setting.
- Analyze personnel management issues.
- Describe and understand legal issues of child care settings.

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## 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. May be offered online.

## Learning Outcomes

Upon successful completion of this course, the student will:

Identify and explain the theories of development (child-study approaches).

- Describe the development of the embryo and fetus.
- Describe the factors influencing prenatal development.
- Explain the effects of the environment on development.
- 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).
- 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).
- Identify the basic physical, cognitive, and social/emotional development of middle childhood and adolescence (seven through 18 years of age).

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## 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:

- Define stress and identify stressors in children's lives.
- Describe the personal, familial, social, political, and economic conditions or circumstances that place undue stress on growing children.
- Increase awareness of diversity in child rearing practices, in values, and attitudes toward children.
- Understand how to create growth-producing environments that meet basic human needs.
- Have a greater insight into yourself and come to appreciate how it was that you dealt with stress.
- See the value of stress in the lives of children and adults.
- Identify resources in the community to use in supporting children and families in stressful situations.

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## 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:

- Explain the values and current research on the practice of inclusion and describe what an inclusive program for preschool children looks like.
- Identify the characteristics of major disabilities.
- Discuss the ways in which disabilities affect the cognitive, language, social, and motor development of preschool age children.
- Discuss the federal and state laws affecting young children with disabilities, and the early intervention system in Oregon.
- Describe teaching techniques for facilitating language and social development in young children in inclusive programs.
- Be familiar with assessment and screening techniques and ways to identify children with possible special needs in the preschool years.
- 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.
- Discuss teaching techniques for children with challenging behaviors.
- Understand some of the needs and concerns of parents whose children have special needs and identify ways to form parent-teacher partnerships

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## Earth and Environmental Sciences

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### 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:

- Evaluate and perform scientific procedures and methods.
  - Evaluate interactions among humans and natural land-based systems and their environmental consequences in case studies.
  - Describe terrestrial ecology, biomes, and biodiversity and explain the biological, geologic, chemical and physical interactions of their components.
  - Describe benefits and drawbacks of practices in forests, agriculture, rangelands, soils, groundwater use, mining, conservation, and waste management.
  - 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.

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### 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. Advise G102, or GEOG141 first. Lab included.

### Learning Outcomes

Upon successful completion of this course, students will be able to:

- 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.
- Interpret and compare some basic characteristics of the atmosphere and processes that influence weather and climate.
- Conduct experiments and make measurements of atmospheric variables such as temperature, pressure, relative humidity and calculate or estimate other atmospheric variables from these.
- Summarize weather hazards and compare their effects on advantaged and disadvantaged human populations.
- Describe the natural and “enhanced” greenhouse effect and its causes.
- Predict potential consequences of global warming to ecologic, hydrologic, marine, meteorological, and human systems.
- 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.
- Describe and analyze the varied evidence for past climate change and assess the reliability and range of error of these data.
- Evaluate her or his contribution to climate change and personal role in mitigating that contribution.
- 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.
- Explain the chemistry of the ozone layer and its depletion and analyze the possible consequences of increasing ozone-destroying gases in the atmosphere.
- Distinguish the greenhouse effect and ozone depletion from each other, and elucidate their commonalities.

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### 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:

- Evaluate and perform scientific procedures and methods.
- Demonstrate and describe key chemical and physical properties of water.
- 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.
- Research the global importance of aquatic biodiversity and ongoing conservation efforts.
- Develop hypotheses and collect field data to study physical parameters including dissolved oxygen, nutrients, pH, and turbidity, and to study life in aquatic ecosystems.
- Demonstrate critical thinking skills by gathering and assessing information about current environmental issues and sustainability related to aquatic ecosystems and water resources conservation.

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### ENSC 183\_H - Aquatic Environment

4 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 [lanec.edu/honors](http://lanec.edu/honors) for information. 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 course also meets Lane Degree requirements that are fulfilled by the same course number without the \_H.

### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Evaluate and perform scientific procedures and methods.
- Demonstrate and describe key chemical and physical properties of water.

- 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.
- Research the global importance of aquatic biodiversity and ongoing conservation efforts.
- Develop hypotheses and collect field data to study physical parameters including dissolved oxygen, nutrients, pH, and turbidity, and to study life in aquatic ecosystems.
- Demonstrate critical thinking skills by gathering and assessing information about current environmental issues and sustainability related to aquatic ecosystems and water resources conservation.

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### 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 103B, BI 103F, BI 103J, ENSC 181, BOT 213, or WST 230.

### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Describe and classify wet lands, invasive and threatened and endangered (T & E) species byecological criteria and observed conditions including hydro-geomorphology, using scientific protocols.&nbsp;
- Describe wetlands’ ecosystem services and the impacts of invasive species.
- Infer important hydrological processes acting at a particular site, based on site observations including infiltration, evapotranspiration, soil water storage, drainage, and seasonal water budget.
- From direct observations, infer mechanisms for presence of wetland, invasive and T and E species on site, and form testable hypothesis.
- With the aid of direct observations, explain the role of soil and vegetation in the management and quality of water on a wetland site.
- 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.
- 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.
- Effectively utilize appropriate library and other information resources to research professional issues and support lifelong learning and job advancement.
- Analyze data and draw supportable conclusions regarding Earth’s interconnected systems in wetlands.
- 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.
- Describe the dynamic nature of wetland and ecological systems, and human interactions with those systems in environmental science and ecology.

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## Economics

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### 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. May be offered through Distance Learning.

**Prerequisite:** MTH 111 and sophomore standing recommended.

### 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 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.

- 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.

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### **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. May be offered online.

**Prerequisite:** ECON 200 or ECON 202.

MTH 111 and sophomore standing recommended.

#### **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: 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.
- 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.

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### **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. May be offered online.

**Prerequisite:** ECON 200 or ECON 201.

MTH 111 and sophomore standing recommended.

#### **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: 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.

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### **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:

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.

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### **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. Meets course requirements for the Water Conservation Technician program.

#### **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: 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.
- 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.

- 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.
- 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.
- 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.
- 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.
- 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.

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## 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:

- Demonstrate their individual characteristics in relation to classmates and
- Recognize another culture, and point of view of schooling.
- Identify major educational landmarks affecting marginalized groups in the U.S.

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### 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 learning styles, 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:

- Think critically by examining your own and students' learning styles and applying appropriate strategies to assist individual learners.
- Think critically by evaluating students' needs and refer to other locations on campus when needed.
- 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
- Engage with civic and ethical awareness by gaining sensitivity into the way students feel about asking for help.

- Create a safe environment for students facing errors and obstacles in coursework by identifying students' and tutors' rights and responsibilities.
- Create a safe environment for students by articulating and modeling goal setting and growth mindset to encourage persistence.
- 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.
- Communicate effectively by identifying questioning criteria and skills to reflect Bloom's Taxonomy.
- Apply earning and leading effective tutor sessions by applying emotional intelligence.
- Apply learning in above theories and practice consistently in life and tutoring by collectively solving current problems identified by tutors.

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### 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 styles, 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.
- Think critically by combining previous learning from ED125 with new content explored.
- 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.
- Engage with civic and ethical awareness through defining white privilege and micro-aggressions and their impact on Lane students and in society.
- 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.
- Create solutions in your work through evaluating the difference between a right-brain learner and a left-brain learner, for yourself and your students.
- Communicate effectively and honestly remaining open to alternative views through evaluating improved listening and communication habits and practices.
- Communicate effectively and honestly through identifying the inner voices that direct your actions.
- Apply learning consistently by demonstrating metacognition in tutoring through evaluating and improving your social awareness (Emotional Intelligence).
- Apply learning consistently through solving current problems collectively as identified by tutors.

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### 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.
- Think critically by combining all learning from ED125 and ED126 and building a plan for a project.
- 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.
- 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.



- 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.
- 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.
- 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.
- Communicate effectively and consistently by modeling positive listening and assertive communication skills.
- Communicate effectively by linking prior Emotional Intelligence coursework with Relationship Management.
- 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.
- Apply learning by planning and executing an independent project with weekly goals and completions.

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### ED 200 - Foundations of Education Seminar

3 Credit(s)

Provides an overview of the American education system, including the diverse historical and philosophical foundations of education. Includes the impact of philosophy on practice and the relationship between equity and access to education.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Use global and historical perspectives, philosophical concepts, and educational views to articulate evolving teaching philosophies of their own.
- Explain how major social, cultural, economic, and political forces have impacted and continue to impact education.
- Describe the diversity found in today's students and the impact of diversity on educational access and societal inequity.

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### 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:

- 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.
- Determine both educational and career goals based upon self-assessment, interests, and skills as well as upon likely job openings in education.
- Demonstrate skills in using technology both to learn and to teach.
- Demonstrate improved writing and reading skills and the ability to teach others to write and to read with fluency.
- Demonstrate an understanding of intrinsic motivation and how to nurture this through the use of precise praise.
- Demonstrate an understanding of cultural diversity and how to support diverse students as a classroom teacher.

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### 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:

- Specify the types of interactions under study that occur among individuals, groups, institutions, societies and/or the natural environment
- Integrate the theory of Marcia's Identity Development with Cross' Theory of Racial Identity Development.

- Describe and explain Bronfenbrenner's Ecological System Theory in your own words. Be inclusive of the terms used in the theory.

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### 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:

- Define and provide examples of culture and its components.
- Explain the rationale for multicultural education.
- Demonstrate techniques to incorporate multicultural education in the curriculum.
- Demonstrate understanding of a minority culture.

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### 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:

Define current terminology and issues in the field<sup>o</sup> of special education including inclusion as well as family and multicultural issues.

- Identify and describe service delivery options for students with disabilities in the least restrictive environment (LRE).
- 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.

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## 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:

- Apply prior knowledge to aid in the integration and retention of new information.
- Monitor and evaluate his/her growth as an active reader.
- Apply appropriate reading strategies to college-level discipline-specific texts.
- Vary reading strategies and reading rate according to the level of difficulty of the material.
- Identify and use patterns of organizations in college-level material and other discipline-specific texts to aid in comprehension.
- Employ various techniques to recognize, define, and use new or unfamiliar vocabulary to maximize reading comprehension and expand readers' vocabulary.
- Evaluate author's credibility.
- Organize and/or synthesize information from college-level reading materials into usable notes and/or study materials.
- Mark text selectively, ask questions of the text, respond to the text, and summarize the text.

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### 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:

- 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.
- Develop and apply a variety of reading strategies for college-level inquiry, learning, and thinking.
- Develop time management and goal setting strategies for successful college-level writing.
- Develop such critical thinking skills as synthesis and analysis as they pertain to writing.
- Develop information literacy skills required for college-level writing including locating, evaluating, and using source material (in print or online).

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### 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. May be offered online.

### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Develop time management and goal setting strategies.
- Demonstrate a variety of textbook reading strategies.
- Generate notes in a variety of formats from diverse sources.
- Locate and use basic resources in LCC Library.
- Apply various memory techniques.
- Employ exam preparation and exam taking techniques.
- Monitor progress in strengthening study skills and strategies.

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### 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:

- Develop time management and goal setting strategies.
- Demonstrate a variety of textbook reading strategies.
- Generate notes in a variety of formats from diverse sources.
- Locate and use basic resources in LCC Library.
- Apply various memory techniques.
- Employ exam preparation and exam taking techniques.
- Monitor progress in strengthening study skills and strategies.

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### 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.

**Prerequisite:** RD 087

**Corequisite:** WR 087

### Learning Outcomes

Upon successful completion of this course, students will be able to:

- 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.
- Apply a variety of reading strategies for paragraph-level inquiry, learning and thinking.
- Use time management and goal setting strategies for successful paragraph writing and grammar improvement.
- Use critical thinking skills such as synthesis and analysis as they pertain to paragraph writing and grammar improvement.
- Identify and use information literacy skills in pre-college level writing including locating, evaluating and using source material. (in print or online)

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### EL 117 - Critical Thinking for Essay Writing

3 Credit(s)

This course is a content-specific study skills course designed for students reading at a college level who wish to strengthen their study skills and strategies in a specific content area for success in the content course. The course is linked with content areas through a content-area course in which students are co-enrolled. The two courses (EL117 and the content-area course) are either linked with extensive instructor collaboration or team-taught. Students will optimize note taking, test preparation, memory, reading, time management, discussion, research, and critical thinking skills with a focus on specific content.

### Learning Outcomes

Upon successful course completion, the student will:

- 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.
- Develop and apply a variety of reading strategies for college-level inquiry, learning, and thinking.
- Develop time management and goal setting strategies for successful college-level writing.
- Develop such critical thinking skills as synthesis and analysis as they pertain to writing.
- Develop information literacy skills required for college-level writing including locating, evaluating, and using source material (in print or online).

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### 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:

- Identify appropriate technology and methods to evaluate credibility of online information.
- Locate and use appropriate online/digital media to expand personal and group knowledge, solve problems, and engage with online communities.
- Choose effective technology for online/digital collaboration to create meaningful academic work.
- Employ effective means of digital communication in academic contexts.
- Apply online study techniques to learn from a variety of digital media.
- Identify and develop skills necessary for successful participation in online learning, including time management, communication, and information sharing strategies.

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## Electronics

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### 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:

- Understand the principles of shop safety.
- Be skilled in basic soldering/de-soldering techniques.
- Have knowledge of electrical diagrams and schematics.
- Have knowledge of the techniques required for proper wire termination.
- Have a basic proficiency in the use of common electronics lab equipment and hand tools.

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### 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:

- Read resistor color codes.
- Measure voltage, current, and resistance.
- Knowledge of DC series-parallel circuit characteristics.
- Understand basic AC circuits and use of the oscilloscope.

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## Emergency Medical Services

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### 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, the student should be able to:

- Define the role and responsibilities of a paramedic.
- Describe the components of the EMS system.
- Relate medical-legal considerations to the area of EMS.
- Propose the steps in a major incident response.
- Define stress management and relate it to the EMS.
- Explain blood-borne pathogens/communicable diseases and describe safety precautions used in the EMS field.

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### 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:

- Assess the student's own stress levels and coping skills associated with personal and job related factors.
- Describe how intervention in crisis situations including mental illness, alcoholism, drug abuse, child abuse, suicide, and battering might affect the health care provider.
- 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.
- Discuss the impact of violence on community and the field of medicine.
- Examine the concept of power and powerlessness of the health care provider and / or the patient or recipient(s) of EMS services.
- Examine personal biases and prejudices in order to develop a more accepting, tolerant and respectful approach to human diversity.
- Propose methods of interacting with persons related to a crisis incident and with victims of trauma, illness, or injury.
- Discuss behavior and interactions for working with a dying patient and their families in a variety of cultural settings.

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### 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.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Describe the role of the EMT at emergencies involving rescue operation.
- Describe the organizational structures and functions of emergency services at an emergency scene.

- Describe the process of "size-up" as it related to decision making for proper tactics and strategies.
- Demonstrate the basic use of rescue techniques, including ropes, knots, ladders, SCBA, and other related items.
- Demonstrate the use of portable fire extinguishers.
- Describe the role of the EMT in extrication.
- Describe the techniques that the EMT can use to gain access to or disentangle patients from vehicles.
- Describe methods and appropriate times to utilize the following extrication equipment: porta-power, hand winch, pry axe, air chisel (optional), bale hook, linoleum knife, hacksaw, screwdriver, spring-loaded center punch, and other.
- Demonstrate on programmed patients, the techniques of lifting and moving of patients in any situation presented.
- Demonstrate on appropriate vehicles the techniques of gaining access to entrapped patients by use of all extraction equipment.
- Demonstrate the correct usage of patient immobilization and removal equipment.

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### 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.

**Corequisite:** EMS 112, EMS 113

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Demonstrate a proficient understanding of: the Emergency Medical System, medical emergencies, the human body.
- Outline proper interventions for specific medical emergencies.
- Function as a member of an EMS team.
- Demonstrate proficiency and understanding of the Department of Transportation objectives for EMT.

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### EMS 112 - Emergency Medical Technician Lab

3 Credit(s)

This course is the Lab component of the Emergency Medical Technician licensing course.

**Corequisite:** EMS 111 And EMS 113

#### Learning Outcomes

Upon successful completion students will should be able to:

- Understand the various types of equipment and technologies used in EMS.
- Perform all skills within the EMT Scope of Practice 3. manage scenarios as both a team member and team leader.

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### EMS 113 - Emergency Medical Technician Clinical

1 Credit(s)

This course is the Clinical Experience component of the Emergency Medical Technician licensing course.

**Corequisite:** EMS 111 And EMS 112

#### Learning Outcomes

Upon successful completion students will should be able to:

- Demonstrate understanding of the working environment of an EMT.
- Work cohesively with an EMS and/or hospital emergency department team.
- Perform skills within the scope of an EMT under the direction of a preceptor.

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### 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



affective domain is measured for competency using published professional standards. A grade of C- or better is required to continue in the program series. Program graduates are eligible to take the Program graduates are eligible to take the National Registry Paramedic Cognitive and Psychomotor Exams.

#### **Learning Outcomes**

Upon completion of this course, the successful student will be able to:

- Understand the concept of pathophysiology.
- Apply principles of pathophysiology to the treatment of patients.
- Demonstrate understanding of the cellular environment and acid-base balancing.

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#### **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. A grade of C- or better is required to continue in the program series. Program graduates are eligible to take the Program graduates are eligible to take the National Registry Paramedic Cognitive and Psychomotor Exams.

**Corequisite:** EMS 112, EMS 113

#### **Learning Outcomes**

Upon completion of this course, the successful student will be able to:

- Understand the concept of pharmacology.
- Apply principles of pharmacology to the treatment of patients.
- Demonstrate understanding of indications, contraindications, side and adverse effects, and desired outcomes of medications

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#### **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. A grade of C- or better is required to continue in the program series. Program graduates are eligible to take the National Registry Paramedic Cognitive and Psychomotor Exams.

**Prerequisite:** EMS 211

#### **Learning Outcomes**

Upon completion of this course, the successful student will be able to:

- Understand the concept of pharmacology.
- Apply principles of pharmacology to the treatment of patients.
- Demonstrate understanding of indications, contraindications, side and adverse effects, and desired outcomes of medications.

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#### **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. A grade of C- or better is required to continue in the program series. Program graduates are eligible to take the 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. A grade of C- or better is required to continue in the program series. Program graduates are eligible to take the National Registry Paramedic Cognitive and Psychomotor Exams..

#### **Learning Outcomes**

Upon completion of this course, the successful student will be able to:

- Integrate the principles of kinematics to enhance the patient assessment and predict the likelihood of injuries based on the patient's mechanism of injury.
- 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.

- Integrate pathophysiological principles and assessment findings to formulate a field impression and implement the treatment plan for the trauma patient.
- 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 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. A grade of C- or better is required to continue in the program series. Program graduates are eligible to take the National Registry Paramedic Cognitive and Psychomotor Exams.

**Prerequisite:** EMS 221

#### **Learning Outcomes**

Upon completion of this course, the successful student will be able to:

- Integrate the principles of kinematics to enhance the patient assessment and predict the likelihood of injuries based on the patient's mechanism of injury.
- 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.
- Integrate pathophysiological principles and assessment findings to formulate a field impression and implement the treatment plan for the trauma patient.
- 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 2-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. A grade of C- or better is required to continue in the program series. Program graduates are eligible to take the National Registry Paramedic Cognitive and Psychomotor Exams.

#### **Learning Outcomes**

Upon completion of this course, the successful student will be able to:

- 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
- 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.
- Utilize gynecological principles and assessment findings to formulate a field impression and implement the management plan for the patient experiencing a gynecological emergency.
- 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.
- Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for a neonatal patient.
- Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the pediatric patient.
- 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 2-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. A grade of C- or better is required to continue in the program series. Program graduates are eligible to take the National Registry Paramedic Cognitive and Psychomotor Exams.

#### Learning Outcomes

Upon completion of this course, the successful student will be able to:

- 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.
- 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.
- Utilize gynecological principles and assessment findings to formulate a field impression and implement the management plan for the patient experiencing a gynecological emergency.
- 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.
- Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for a neonatal patient.
- Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the pediatric patient.
- 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 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 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. A grade of C- or better is required to continue in the program series. Program graduates are eligible to take the National Registry Paramedic Cognitive and Psychomotor Exams

#### Learning Outcomes

Upon completion of this course, the successful student will be able to:

- 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.
- 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.
- Utilize gynecological principles and assessment findings to formulate a field impression and implement the management plan for the patient experiencing a gynecological emergency.
- 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.
- Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for a neonatal patient.
- Integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the pediatric patient.
- 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. A grade of C- or better is required to continue in the program series. Program graduates are eligible to take the Oregon/ National.

#### Learning Outcomes

Upon completion of this course, the successful student will be able to:

- Understand the heart anatomy and physiology, conduction, and electrophysiology.

- Analyze, recognize, and determine electrocardiographic rhythms of the heart.
- Identify and form treatment plans based on electrocardiography.

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#### 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. A grade of C- or better is required to continue in the program series. Program graduates are eligible to take the Oregon/ National.

**Prerequisite:** EMS 241

#### Learning Outcomes

Upon completion of this course, the successful student will be able to:

- Understand the heart anatomy and physiology, conduction, and electrophysiology.
- Analyze, recognize, and determine electrocardiographic rhythms of the heart.
- Identify and form treatment plans based on electrocardiography.

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#### EMS 251 - Paramedic Lab 1

1-3 Credit(s)

This course is part 1 of a 3-part lab series for Paramedicine.

#### Learning Outcomes

Upon completion of this course, the successful student will be able to:

- Safely, and while performing all steps of each procedure, properly administer medications to patients.
- Accurately calculate drug dosages.
- Accurately calculate iv drip rates, safely, and while performing all steps of each procedure, successfully access the venous circulation on patients.
- Identify patient medication interactions, precautions.
- Interview with patients regarding symptoms.
- Evaluate patients for pertinent signs.
- Obtain and record vital signs.
- Identify adventitious lung sounds.
- Identify EKG rhythms.
- Apply the general concepts of pathophysiology in the assessment and management of emergency patients.
- Integrate pathophysiological principles of pharmacology and the assessment findings to formulate a field impression and implement a pharmacologic management plan.
- Use the appropriate techniques to obtain a medical history from a patient.
- Explain the pathophysiological significance of physical exam findings.
- Integrate the principles of history taking and techniques of physical exam to perform a patient assessment.
- Apply a process of clinical decision making to use the assessment findings to help form a field impression.
- 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.
- 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.
- 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.

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#### EMS 252 - Paramedic Lab 2

1-3 Credit(s)

This course is part 2 of a 3-part lab series for Paramedicine.

#### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Safely, and while performing all steps of each procedure, properly administer medications to patients.
- Accurately calculate drug dosages.
- Accurately calculate iv drip rates, safely, and while performing all steps of

each procedure, successfully access the venous circulation on patients.

- Identify patient medication interactions, precautions.
- Interview with patients regarding symptoms.
- Evaluate patients for pertinent signs.
- Obtain and record vital signs.
- Identify adventitious lung sounds.
- Identify EKG rhythms.
- Apply the general concepts of pathophysiology in the assessment and management of emergency patients.
- Integrate pathophysiological principles of pharmacology and the assessment findings to formulate a field impression and implement a pharmacologic management plan.
- Use the appropriate techniques to obtain a medical history from a patient.
- Explain the pathophysiological significance of physical exam findings.
- Integrate the principles of history taking and techniques of physical exam to perform a patient assessment.
- Apply a process of clinical decision making to use the assessment findings to help form a field impression.
- 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.
- 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.
- Discuss the concept of “due regard for the safety of all others” while operating an emergency vehicle.
- Understand all principles of operating an ambulance. Demonstrate understanding and application of leadership, communication, and documentation.

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### EMS 253 - Paramedic Lab 3

1-3 Credit(s)

This course is part 3 of a 3-part lab series for Paramedic.

#### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Safely, and while performing all steps of each procedure, properly administer medications to patients.
- Accurately calculate drug dosages.
- Accurately calculate iv drip rates. safely, and while performing all steps of each procedure, successfully access the venous circulation on patients.
- Identify patient medication interactions, precautions.
- Interview with patients regarding symptoms.
- Evaluate patients for pertinent signs.
- Obtain and record vital signs.
- Identify adventitious lung sounds.
- Identify EKG rhythms.
- Apply the general concepts of pathophysiology in the assessment and management of emergency patients.
- Integrate pathophysiological principles of pharmacology and the assessment findings to formulate a field impression and implement a pharmacologic management plan.
- Use the appropriate techniques to obtain a medical history from a patient.
- Explain the pathophysiological significance of physical exam findings.
- Integrate the principles of history taking and techniques of physical exam to perform a patient assessment.
- Apply a process of clinical decision making to use the assessment findings to help form a field impression.
- 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.
- 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.
- 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.

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### 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.

#### Learning Outcomes

Upon completion of this course, the successful student will be able to:

- Safely, and while performing all steps of each procedure, properly administer medications to live adult patients.
- Accurately calculate drug dosages.
- Accurately calculate iv drip rates.
- Safely, and while performing all steps of each procedure, successfully access the venous circulation on live adult patients.
- Identify patient medication interactions, precautions.
- Interview with patients regarding symptoms.
- Evaluate patients for pertinent signs.
- Obtain and record vital signs.
- Identify adventitious lung sounds.
- Identify EKG rhythm.

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### 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.

#### Learning Outcomes

Upon completion of this course, the successful student will be able to:

- Safely, and while performing all steps of each procedure, properly administer medications to live adult patients.
- Accurately calculate drug dosages.
- Accurately calculate iv drip rates.
- safely, and while performing all steps of each procedure, successfully access the venous circulation on live adult patients.
- Identify patient medication interactions, precautions.
- Interview with patients regarding symptoms.
- Evaluate patients for pertinent signs.
- Obtain and record vital signs.
- Identify adventitious lung sounds.
- Identify EKG rhythm.

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### 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:

#### Learning Outcomes

Upon completion of this course, the successful student will be able to:

- Safely, and while performing all steps of each procedure, properly administer medications to live adult patients.
- Accurately calculate drug dosages.
- Accurately calculate iv drip rates.
- Safely, and while performing all steps of each procedure, successfully access the venous circulation on live adult patients.
- Identify patient medication interactions, precautions.
- Interview with patients regarding symptoms.
- Evaluate patients for pertinent signs.
- Obtain and record vital signs.
- Identify adventitious lung sounds.
- Identify EKG rhythm.



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# Energy Management

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## 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.

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## NRG 103 - Sustainability in The Built Environment

3 Credit(s)

Introduces the relationship between sustainability and buildings. Addresses the "Three Es of Sustainability" in the built environment by exploring the ENVIRONMENTAL influences of buildings, ECONOMIC benefits of conservation and efficiency and social EQUALITY. The course explores the Leadership in Energy and Environmental (LEED) Design framework. May be offered online.

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## 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:

- Be able to define sustainable development and identify a few of its key concepts.
- Identify and describe renewable and nonrenewable resources and a few of their implications.
- Define green careers and describe their importance for sustainable development.
- Can explain basic industry knowledge for multiple green careers and identify necessary skill sets needed for those careers.
- Relate personal career goals to green career.

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## 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:

- Understand the fundamentals of each software and identify major features.
- Recognize & Identify current software and describe how each is utilized within the industry.
- Demonstrate basic software application skills by completing a task.
- Utilize several applications concurrently to solve a case study.

Identify software required for different scenarios or job tasks.

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## NRG 111 - Residential/Light Commercial Energy Analysis

3 Credit(s)

Prerequisite: PH 101 or Department Approval. 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.

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## NRG 112 - Commercial Energy Use Analysis

4 Credit(s)

Prerequisite: NRG 111 and NRG 121 and MTH 095 or Math Placement Test or Department Approval. 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 Test or Department Approval.

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## 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.

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## NRG 122 - Commercial Air Conditioning System Analysis

3 Credit(s)

Prerequisite: NRG 121 or Department Approval. 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.

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## NRG 123 - Energy Control Strategies

4 Credit(s)

Prerequisite: NRG 122 and NRG 124 or Department Approval. 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.

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## NRG 124 - Energy Efficiency Methods

4 Credit(s)

Prerequisite: PH 102. Corequisite: NRG 121 or Department Approval. 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

**Corequisite:** NRG 121 or department approval.

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## NRG 131 - Lighting Fundamentals

3 Credit(s)

Prerequisite: PH 101 and PH 102 or Department Approval. 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.

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## NRG 141 - Energy Investment Analysis

3 Credit(s)

Prerequisite: NRG 111 or Department Approval. Analysis of energy investments using spreadsheets to consider total cost-benefits over the life of the investment. Topics: interest, simple payback and life-cycle cost analysis, time value of money, cost-benefit analysis, effects of tax credits, inflation, escalation, and cost estimating procedures.

**Prerequisite:** NRG 111 or department approval.

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## NRG 142 - Energy Accounting

3 Credit(s)

Prerequisite: BT 123. 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

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## NRG 154 - Alternative Energy Technologies

3 Credit(s)

A survey of the sources of renewable energy that may be used to increase energy supply in the Pacific Northwest. Included are geothermal, wind, low head hydro, solar and biomass. Environmental, social and economic advantages of each source are assessed.

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## NRG 155 - Photovoltaic System Design and Installation 1

4 Credit(s)

Prerequisite: PH 101 and PH 102 and MTH 095 or Math Placement Test. Corequisite: NRG 157 or Department Approval. This hands-on course will cover the National Electrical Code (NEC) specifics concerning photovoltaic (PV) installation article 690. Code compliant wiring of modules, inverters, charge controllers, and batteries will be explored in detail. Students will use materials designed for installation practice both indoors and out.

**Prerequisite:** PH 101 and PH 102 and MTH 095 or math placement test.

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**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.

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**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.

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**NRG 183 - Controls Retuning and Troubleshooting**

4 Credit(s)

Prerequisite: NRG 181 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

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**NRG 184 - Direct Digital Controls 2**

4 Credit(s)

Prerequisite: NRG181 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

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**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:

- Define and use appropriate vocabulary specific to commercial lighting control systems.
- Select appropriate systems for various control applications.
- Modify control sequences of operation.
- Identify and solve control system issues.
- Specify lighting control system components.
- Use critical thinking skills to identify and evaluate energy saving opportunities.
- Calculate energy consumption savings.

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## Engineering

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**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.

**Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Demonstrate an appreciation and basic understanding of the history of engineering.
- Demonstrate an understanding of how the innovations created by engineers of the past have affected today's society and the environment.
- Demonstrate an understanding of the various engineering fields, the required academic training, career options and flexibility, salaries.

- Demonstrate an appreciation of challenges facing humans in the future and the role that engineers will play in addressing these challenges.
- 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.
- Demonstrate exposure to fundamentals of engineering including units of measure and unit conversion, mathematics skills, statics, dynamics, thermodynamics, electricity, and economics.

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**ENGR 102 - Engineering Orientation 2**

4 Credit(s)

This course is an introduction to the use of computing language in engineering. Students will use a standard problem-solving methodology through the course.

**Prerequisite/Corequisite:** MTH 251 or MTH 252 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:

- Use critical thinking skills to structure and solve problems drawn from technical areas.
- Use selected features of computer software (currently MATLAB and Excel) as tools in problem settings.
- Independently learn new features of technically oriented computer software (currently MATLAB).
- Participate productively in technical group work.

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**ENGR 115 - Engineering Graphics**

3 Credit(s)

An introduction to graphic communication, including visualization, multiview and isometric

**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:

- Understand fundamental standards and conventions applied to mechanical drawings.
- Use sketches to communicate and record design intent.
- Use Solidworks to create 3-D solid models and to generate and plot 2-D drawings.
- Understand fundamental principles of orthographic and isometric projection.
- Understand fundamental principles of auxiliary and section views.

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**ENGR 211 - Statics**

4 Credit(s)

projections, sections, auxiliary views, and ASME dimensioning and tolerancing standards.

**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:

- Apply vector algebra to compute the resultants of coplanar force systems.
- Draw correct Free Body Diagrams and write the corresponding equations of equilibrium.
- Solve equilibrium equations for unknown force components.
- Determine forces acting in simple trusses, frames, and machines.
- Locate centroids of areas.
- Construct axial force, shear, and bending moment diagrams for statically determinate beams under various loading conditions.
- Solve problems involving coulomb friction.

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**ENGR 212 - Dynamics**

4 Credit(s)

Graphic concepts are applied using freehand sketching and Solidworks.

**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:

- Demonstrate appropriate application of the equations of kinematics to situations involving motion of a particle in space.

- Demonstrate appropriate application of Newton's Second Law and the equations of kinetics to situations involving motion of a particle in space.
- Demonstrate appropriate application of the equations of kinematics to situations involving motion of a rigid body in space.
- Solve dynamics problems visually using vector geometry.
- 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).

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### 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:

- Solve problems involving single loading principles.
- Evaluate basic combined loading effects.
- Demonstrate application of basic indeterminate analysis techniques.
- Demonstrate understanding of basic elastic / plastic analysis.
- Calculate simple beam deflections.
- Use buckling theory applied to simple columns subjected to various end conditions.

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### 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:

- Understand and apply the current-voltage relationships (Ohm's Law) of resistors.
- Understand, model and analyze the current-voltage relationships for nonlinear circuit elements such as diodes.
- Understand and analyze independent and dependent current and voltage sources in dc circuits.
- Understand and apply the concept of power to various circuit elements.
- Understand and apply Kirchoff's laws.
- Understand and apply series and parallel resistor connections to simplify circuits and identify when circuits cannot be simplified.
- Understand and apply the concepts of voltage and current division.
- Understand and apply Wye-Delta transformations to simplify circuits.
- Understand and apply mesh analysis and nodal analysis for resistive circuits.
- Understand and apply Superposition principle to simplify circuits.
- Understand and apply Thevenin's and Norton's theorems to simplify circuits.
- Understand and apply load line analysis to solve linear and nonlinear circuits.
- Analyze non-ideal op-amp circuits.
- Understand and analyze circuits involving op-amps including inverting and non-inverting amplifiers, summation circuits and more.
- Understand and apply the current-voltage relationships of capacitors.
- Understand and apply the current-voltage relationships of inductors.
- Analyze first and second-order circuits, which contain resistors, capacitors, or inductors. Skills (Problem solving, Design, Experiment and other ABET related skills).
- 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.
- Design and conduct experiments: Use available equipment to design

experiment; Develop measurement model for experiment; Analyze and interpret data.

- 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.
- Function on teams: Ideally multidisciplinary (although limited by course constraints)
- Understand and demonstrate ethical behavior
- Understand impact of engineering solutions in global and societal contexts
- Engage in life-long learning
- Gain experience in building and troubleshooting circuits using standard testing equipment.
- 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
- Consider multiple methods of analysis to arrive at a solution.
- Evaluate special and extreme cases
- Use solutions to make predictions
- Check solutions based on graphs, units, physical constraints, conservation laws, limiting behavior and reasonable fit to the question
- Use multiple representations to determine solution

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## English

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### ENG 100 - Children's Literature

4 Credit(s)

College-level reading and writing skills (a passing grade in WR 115 or placement into WR 121) are strongly recommended for success. Children's Literature is a wide-ranging introductory course, including a history of both British and American 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. The class reads a variety of material including fairy tales, picture books, and young adult novels. 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 multi-cultural 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 also addresses children's literature from a literary perspective, discussing the texts from theoretical as well as a pedagogical framework. A major aim of the class is to introduce students to recent and emerging authors to broaden familiarity with current material available to young people.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Gain familiarity with a variety of texts for young readers across genres and historical periods.
- 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.
- 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.
- 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 .
- Identify how social, political, cultural, economic, and historical factors influence the creation, publication, and interpretation of literature for young children.
- Critically read and engage with texts written for children, paying careful attention to issues related to diversity (or lack thereof) within these texts.
- Identify some of the major motifs and archetypes in Children's Literature.
- 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.
- Examine the role children's literature plays in the literacy process.

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### ENG 104 - Introduction to Literature: Fiction

4 Credit(s)

College-level reading and writing skills (a passing grade in WR 115 or placement into WR 121) are strongly recommended for success. 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. May be offered online.

#### **Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Distinguish between connotation and denotation and demonstrate how the connotative language helps shape major points of a literary text (poem, story, play).
- Demonstrate an ability to read works of fiction at both a literal and figurative level.
- Articulate familiarity with social and political perspectives on fiction, such as those that consider race, gender, ethnicity, nationality and sexual orientation.
- Identify and define significant literary devices (such as plot, character, setting, theme and point of view) for the purpose of meaningful interpretation.
- Demonstrate an appreciation of the power of fiction to create worlds.
- Demonstrate an awareness of one's self and others as members of a culture.
- Demonstrate an 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).
- 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).
- Formulate and apply criteria that are appropriate to the context and genre of the literary text when evaluating works of fiction.
- Distinguish between unsupported responses and literary-critical judgment when evaluating works of fiction
- Develop initial responses into literary-critical judgment.
- Use effective oral and written communication, including at least one formal essay to express literary interpretations and evaluations developed independently and/or collaboratively.
- Produce a significant amount of interpretive and analytical writing using well-selected textual and other evidence.
- Utilize MLA, APA, or equivalent standard style sheet documentation when needed, and edited Standard American English.
- Demonstrate ability to use interpretive frameworks to investigate contextual meanings of literature.

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#### **ENG 105 - Introduction to Literature: Drama**

4 Credit(s)

College-level reading and writing skills (a passing grade in WR 115 or placement into WR 121) are strongly recommended for success. This course will introduce the student to a wide variety of world plays which may include classical Greek drama, Shakespeare, and modern works of today. Students will engage in reading, writing, and discussion of the plays they read. May be offered online.

#### **Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Distinguish between connotation and denotation and demonstrate how the connotative language helps shape major points of a literary text (poem, story, play).
- Demonstrate an ability to read works of drama at both literal and figurative level.
- Use effective oral and written communication including at least one formal essay to express literary interpretations and evaluations developed independently and/or collaboratively.
- Produce a significant amount of interpretive and analytical writing using well-selected textual and other evidence.
- Utilize MLA, APA, or equivalent standard style sheet documentation when needed, and edited Standard American English.
- Gain the ability to respond emotionally and intellectually to plays as a reader and a real-life viewer.
- Be willing to extend consciousness and deepen insight in the possibilities of what it means to be a human being.
- Understand a wide range of dramatic terms such as catharsis, dramatic irony, theater of the absurd, etc.
- Better appreciate the development of character and theme as well as the multiplicity of meaning that lies below the surface plot.
- Demonstrate ability to use interpretive frameworks to investigate contextual meanings of literature.

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#### **ENG 106 - Introduction to Literature: Poetry**

4 Credit(s)

College-level reading and writing skills (a passing grade in WR 115 or placement into WR 121) are strongly recommended for success. 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. May be offered online.

#### **Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Distinguish between connotation and denotation and demonstrate how the connotative language helps shape major points of a literary text (poem, story, play).
- Demonstrate an ability to read works of poetry at both a literal and figurative level.
- Use effective oral and written communication including at least one formal to express literary interpretations and evaluations developed independently and/or collaboratively.
- Produce a significant amount of interpretive and analytical writing using well-selected textual and other evidence.
- Utilize MLA, APA, or equivalent standard style sheet documentation when needed, and edited Standard American English.
- Develop and be able to demonstrate a scholarly relationship to poetry, in both it's intellectual and emotional aspects.
- Understand and be able to apply poetic terms and devices such as voices, diction, word choice imagery, symbols, rhythm and meter, and figures of speech.
- Develop and be able to demonstrate an awareness of the ways in which many types of human experience relate to poetry.
- Develop and be able to demonstrate an awareness of many recognized poets from diverse backgrounds.
- Demonstrate ability to use interpretive frameworks to investigate contextual meanings of literature.

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#### **ENG 107 - Survey of World Literature**

4 Credit(s)

College-level reading and writing skills (a passing grade in WR 115 or placement into WR 121) are strongly recommended for success. 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 ancient and medieval eras.

#### **Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Demonstrate an understanding of selected major literary themes and important developments and transformations within and across cultures.
- Demonstrate an awareness of the functioning of the formal elements of literature, character, plot setting, imagery, symbol, point-of-view, and tone.
- Demonstrate an understanding of important historical and cultural contexts that affect literature.
- Demonstrate capability to examine multiple points of view relating to gender and culture, and to embrace contrasting truths."

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#### **ENG 109 - Survey of World Literature**

4 Credit(s)

College-level reading and writing skills (a passing grade in WR 115 or placement into WR 121) are strongly recommended for success. 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.

#### **Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Demonstrate an understanding of selected major literary themes and important developments and transformations within and across cultures.
- Demonstrate an awareness of the functioning of the formal elements of literature -- character, plot setting, imagery, symbol, point-of-view, and tone.

- Demonstrate an understanding of important historical and cultural contexts that affect literature.
- Demonstrate capability to examine multiple points of view relating to gender and culture, and to embrace contrasting truths.”

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### ENG 151 - Black American Literature

4 Credit(s)

College-level reading and writing skills (a passing grade in WR 115 or placement into WR 121) are strongly recommended for success. This course will offer students an intense examination and exploration of black 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. Novels, short stories, poems, biographies, and critical essays will be studied.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Have a working knowledge of what defines African-American literature.
- Understand the critical differences between African-American and White American literature.
- Have a better understanding of the process of legitimization black writers experience in order for their works to be validated by the white publishing world.
- Have an awareness of the theme of double-consciousness” and its role in the development of African American literature.

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### ENG 194 - Literature of Comedy

4 Credit(s)

College-level reading and writing skills (a passing grade in WR 115 or placement into WR 121) are strongly recommended for success in this course. Literature of Comedy is a one-term course to acquaint students with representative works of literature defined by tradition as comedy, including essays, poems, plays, short fiction, film, and novels. The class is intended for students who aspire to pursuing a broad education and who want to expand their reading experience, interpretive skills, and their understanding of the literary genre of comedy as works which affirm community, explore love, and portray restoration in human life, even as they make us laugh.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Distinguish between connotation and denotation and demonstrate how the connotative language helps shape major points of a literary text (poem, story, play).
- Demonstrate an understanding of the genre of comedy and its developments historically as well as within varying cultural contexts.
- Demonstrate an awareness of the functioning of the formal elements of literature, character, plot, setting, imagery, symbol, point of view, irony, metaphor, and tone.
- Demonstrate the capability to examine multiple points of view relating to gender and culture, and not only to embrace contrasting truths, but to see that such multiplicity of perspectives is germane to the genre of comedy.
- Demonstrate an understanding of the different elements of comedy itself, including, but not limited to theory of laughter, humor, satire, farce, creation of community, and healing.
- Demonstrate an ability to contribute to collaborative learning projects and small group discussions.
- Demonstrate understanding of literary proof as the basis of supporting a literary interpretation.
- Understand that literary interpretation, while subject to the need for valid proof, is also open-ended and creative.
- Demonstrate ability to use interpretive frameworks to investigate contextual meaning of literature.

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### ENG 201 - Shakespeare

4 Credit(s)

College-level reading and writing skills (a passing grade in WR 115 or placement into WR 121) are strongly recommended for success in this course. 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

Upon successful completion of this course, the student should be able to:

- Distinguish between connotation and denotation and demonstrate how the connotative language helps shape major points of a literary text (poem, story, play).

- Demonstrate ability to use interpretive frameworks to investigate contextual meanings of literature.
- Write papers informed by an understanding of issues arising from the plays and sonnets (i.e., to see the plays in their social contexts); demonstrate a willingness to explore personal responses to the work.
- Identify and discuss themes, issues, and language conventions in a variety of plays with fluency and confidence.
- Respond to class content orally and/or read, recite, and/or perform scenes from the plays with fluency and confidence.

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### ENG 203 - Shakespeare

4 Credit(s)

College-level reading and writing skills (a passing grade in WR 115 or placement into WR 121) are strongly recommended for success in this course. 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

Upon successful completion of this course, the student should be able to:

- Distinguish between connotation and denotation and demonstrate how the connotative language helps shape major points of a literary text (poem, story, play).
- Demonstrate ability to use interpretive frameworks to investigate contextual meanings of literature.
- Be able to write papers informed by an understanding of issues arising from the plays and sonnets (i.e., to see the plays in their social contexts); demonstrate a willingness to explore personal responses to the work.
- Be able to identify and discuss themes, issues, and language conventions in a variety of plays with fluency and confidence.
- Respond to class content orally and/or read, recite, and/or perform scenes from the plays with fluency and confidence.

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### ENG 204 - Survey of British Literature

4 Credit(s)

College-level reading and writing skills (a passing grade in WR 115 or placement into WR 121) are strongly recommended for success in this course. 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 comes from the Anglo-Saxon era, the Middle English period, and the Renaissance, through Milton. 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

Upon successful completion of this course, the student should be able to:

- Recognize the development of the English language through reading texts written between 900-1680 CE.
- Demonstrate an awareness of the chronology of British Literary History 900-1680.
- Read aloud poetic selections of Beowulf, Chaucer, Elizabethan writers, and Milton to demonstrate an awareness of the change in the material qualities of the English language.
- Demonstrate a rudimentary understanding of poetic conventions, i.e., alliteration, kennings, meter, blank verse, etc.
- Demonstrate an understanding of the importance of social, political and cultural contexts shaping and being shaped by literary productions.
- Understand the epic structure of Milton’s Paradise Lost and the political and religious controversies in which poets of the period engaged.
- Recognize the emergence of the changes on the role of women in literary texts across the period covered.
- Understand the developing consciousness of England as an imperial power and its influence on literary invention.
- Distinguish between connotation and denotation and demonstrate how the connotative language helps shape major points of a literary text (poem, story, play).
- Demonstrate ability to use interpretive frameworks to investigate contextual meanings of literature.

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### ENG 205 - Survey of British Literature

4 Credit(s)

College-level reading and writing skills (a passing grade in WR 115 or

placement into WR 121) are strongly recommended for success in this course. 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 second term includes British literature of the late 17th century through the modern period. 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

Upon successful completion of this course, the student should be able to:

- Distinguish between connotation and denotation and demonstrate how the connotative language helps shape major points of the piece (poem, story, play).
- Demonstrate ability to use interpretive frameworks to investigate contextual meanings of literature.
- Demonstrate a rudimentary understanding of literary interpretation methodologies taught in the course.
- Recognize the formal innovations of the periods covered and their social and cultural impacts (e.g., the English novel and Romantic poetry).
- Recognize the changing roles of women and non-English Anglophone groups in literary representation and production.
- Understand the role of England's geopolitical development as an imperial power and its influence on literary invention.

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#### ENG 215 - Latino/a Literature

4 Credit(s)

College-level reading and writing skills (a passing grade in WR 115 or placement into WR 121) are strongly recommended for success in this course. This is an introductory course to Latino/a 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 Latino/a writers in the United States.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Analyze a variety of literature in terms of theme, symbolism and cultural contexts.
- Understanding Latino/a literature within a global literary and political context.
- Distinguish between connotation and denotation and demonstrate how connotative language shapes major parts of the selected novels and poetry.
- Demonstrate ability to use interpretive frameworks to investigate contextual meanings of literature.

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#### ENG 217 - Reading, Writing and Digital Culture

4 Credit(s)

College-level reading and writing skills (a passing grade in WR 115 or placement into WR 121) strongly recommended for success. 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.

#### Learning Outcomes

Upon successful completion of this course, the student will:

- 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.
- Use various digital humanities strategies to interpret literary and/or other culturally significant texts.
- Collaborate with peers through new technologies.
- 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.
- 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 geomapped open-source document, etc.).

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#### ENG 222 - Literature and Gender

4 Credit(s)

College-level reading and writing skills (a passing grade in WR 115 or placement into WR 121) are strongly recommended for success in this course.

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 will explore the ways in which gender is a socially constructed identity. Critical thinking will play a role as students consider concepts such as social norm, gender construction, subject position, self-other paradigms, and ideology. Feminist models of literary criticism may be considered.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Develop an understanding of literature, its techniques and values.
- Understanding how representations of gender are influenced by literary forms.
- Understand how race, class, sexual orientation, and nationality have shaped literary representations of gender.
- Distinguish between connotation and denotation and demonstrate how connotative language helps shape major aspects of the literary tradition.
- Demonstrate ability to use interpretive frameworks to investigate contextual meanings of literature.

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#### ENG 232 - Native American Literature, Myth and Folklore

4 Credit(s)

College-level reading and writing skills (a passing grade in WR 115 or placement into WR 121) are strongly recommended for success in this course. 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:

- Recognize their experience, strength and hope more completely by placing it alongside the experiences, strengths, and hopes expressed by Native American literary artists.
- Identify major themes developed in Native American literature.
- Identify elements of world view common to Native American people and expressed in their literatures.
- Recognize these elements and themes as they function in a wide variety of Native American texts, especially oral ones.
- Identify the distinctive literary characteristics of Native American oral literary traditions.
- 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.
- Recognize these characteristics operating in pieces of oral and written Native American literature.
- Distinguish between connotation and denotation and demonstrate how connotative language helps shape major aspects of the literary tradition.
- Demonstrate ability to use interpretive frameworks to investigate contextual meanings of literature.

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#### ENG 240 - Nature Literature

4 Credit(s)

College-level reading and writing skills (a passing grade in WR 115 or placement into WR 121) are strongly recommended for success in this course. People have always explained themselves and their world according to how they define and perceive their relationship with nature. The Nature Literature course will examine how literature reflects mythological, theological, philosophical, and scientific views toward nature. Readings will include fiction, poems, non-fiction, and personal essays that project a variety of attitudes toward nature. Students will keep regular journals in response to their readings and experiences, and will also do their own pieces of nature writing.”

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

1. Thoughtfully examine various definitions of nature.

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#### ENG 243 - Native American Autobiography

4 Credit(s)

College-level reading and writing skills (a passing grade in WR 115 or placement into WR 121) are strongly recommended for success in this course. 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:

- Discuss the interconnectedness of culture, literary works, and anthropology.
- Understand the importance of studying the personal along with traditional ways of seeing.
- Use critical thinking skills to understand the effects of race and gender on society.
- Distinguish between connotation and denotation and demonstrate how connotative language helps shape major aspects of the literary tradition.
- Demonstrate ability to use interpretive frameworks to investigate contextual meanings of literature.

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#### ENG 244 - Asian American Literature

4 Credit(s)

College-level reading and writing skills (a passing grade in WR 115 or placement into WR 121) are strongly recommended for success in this course. The course will familiarize students with the literature written by American writers of Asian ancestry. The course may also engage students in 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

Upon successful completion of this course, the student should be able to:

- Identify recurring themes in Asian American literature specifically, and American literature generally.
- Identify the experiences and history that informs Asian American literature.
- Reference a framework for thinking about race, identity, culture, society, and literature.
- Identify significant texts and authors of Asian American literature.
- Critically analyze literary texts through a practice of close reading.
- Demonstrate ability to use interpretive frameworks to investigate contextual meanings of literature.
- Be able to distinguish between connotation and denotation and demonstrate how connotative language helps shape major aspects of the literary tradition.

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#### ENG 250 - Introduction to Folklore and Mythology

4 Credit(s)

College-level reading and writing skills (a passing grade in WR 115 or placement into WR 121) are strongly recommended for success in this course. 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, and explore the relationship between myth, culture, and society. Folklore and myth will also be considered from a cross-cultural perspective.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Identify characteristics and functions of folklore.
- Identify characteristics and functions of folk groups.
- 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.
- Identify by observation folkloric and mythic elements in mass/mainstream U.S. culture, past and present.
- Identify folkloric and mythic elements in their own lives and the lives of the people around them.
- Recognize the processes through which folklore and myth survive and are transmitted.
- Identify folkloric and mythic elements in published fictional and non-fictional texts. Acquire a cross-cultural understanding of human experiences.

- Be able to distinguish between connotation and denotation and demonstrate how connotative language helps shape major aspects of the literary tradition.
- Demonstrate ability to use interpretive frameworks to investigate contextual meanings of literature.

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#### ENG 253 - Survey of American Literature

4 Credit(s)

College-level reading and writing skills (a passing grade in WR 115 or placement into WR 121) are strongly recommended for success in this course. Survey of American Literature is a two-term sequence to acquaint 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 interpretations. Questions of genre, authorship, aesthetics, and literary movements may be examined in their relationships to social, political, and intellectual movements in the United States. The first term will draw on material from colonial settlement in the Americas through the Civil War period.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Distinguish between connotation and denotation and demonstrate how the connotative language helps shape major points of a literary text (poems, story, play).
- Demonstrate ability to use interpretive frameworks to investigate contextual meanings of literature.
- Recognize historical and mythological viewpoints and central themes and how these viewpoints establish different worldviews and value systems.
- Understand international influences on the United States, including immigration and power relations between countries.
- Understand the complexity of national issues and their influence on the literature, particularly political, educational, and religious goals, the use of different languages, the establishment of social goals, and legal and economic systems.
- Explore how the literature reflects and shapes perceptions of critical social issues such as slavery, treatment of Native Americans, attitudes toward immigrants, and the rights of women.
- Consider the role of community in literature, what are considered the center and the margins of community, and the boundaries between groups of people as well as what establishes a sense of belonging.
- Appreciate the different ways freedom is defined and established, including rights, choices, and civic order and responsibilities.
- Understand oneself better as an American, or a person living in American, and as a human being.
- Consider persona identity issues based on race, class, gender, religion, education, and sexual preference, and how those issues are addressed in literature.
- Experience different writers' sense of place, the land and sense of home.
- Understand why certain American authors have been included in the literary canon and others excluded, specifically women and ethnic minorities.
- Develop an understanding of the major changes in literary genres and style, why certain genres are studied in the academy and others excluded, and why certain stories are repeated each generation in different forms.

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#### ENG 254 - Survey of American Literature

4 Credit(s)

College-level reading and writing skills (a passing grade in WR 115 or placement into WR 121) are strongly recommended for success in this course. Survey of American Literature is a two-term sequence to acquaint 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 interpretations. 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 second term will include literature from the end of the 19th century to the present.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Distinguish between connotation and denotation and demonstrate how the connotative language helps shape major points of a literary text (poems, story, play).
- Demonstrate ability to use interpretive frameworks to investigate contextual meanings of literature.
- Recognize historical and mythological viewpoints and central themes and how these viewpoints establish different worldviews and value systems.

- Understand international influences on the United States, including immigration and power relations between countries.
- Understand the complexity of national issues and their influence on the literature, particularly political, educational, and religious goals, the use of different languages, the establishment of social goals, and legal and economic systems.
- Explore how the literature reflects and shapes perceptions of critical social issues such as slavery, treatment of Native Americans, attitudes toward immigrants, and the rights of women.
- Consider the role of community in literature, what are considered the center and the margins of community, and the boundaries between groups of people as well as what establishes a sense of belonging.
- Appreciate the different ways freedom is defined and established, including rights, choices, and civic order and responsibilities.
- Understand oneself better as an American, or a person living in American, and as a human being.
- Consider persona identity issues based on race, class, gender, religion, education, and sexual preference, and how those issues are addressed in literature.
- Experience different writers' sense of place, the land and sense of home.
- Understand why certain American authors have been included in the literary canon and others excluded, specifically women and ethnic minorities.
- Develop an understanding of the major changes in literary genres and style, why certain genres are studied in the academy and others excluded, and why certain stories are repeated each generation in different forms.

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### **ENG 257 - The American Working Class in Fiction and Non-Fiction**

4 Credit(s)

College-level reading and writing skills (a passing grade in WR 115 or placement into WR 121) are strongly recommended for success in this course. Using the concept of the "American Dream" to examine work, class, and social mobility, students can appreciate the power of class to shape our individual lives and our culture. A prevailing belief in America is that we are a "classless" society. However, this literature course includes fiction, non-fiction, autobiography, poetry, and documentaries that explore ways that the inequalities of class, ethnicity, race, and gender interrelate to sustain the power and interests of economic elites.

#### **Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Read and analyze films, essays, and stories, including images and metaphors, and critical analysis about American working class lives.
- Write about their work experiences and the experiences of people they know. To produce a creative work in relation to the readings and class discussions.
- Analyze on many levels how the storytellers, songwriters, poets, filmmakers, and critics explore the centrality of class status and work (the experience and consciousness of both) in their own, the culture's or characters' lives.
- Critically examine their descriptions of what people get out of working life and what it takes out of them.
- Examine how the stories and images show work and class intersecting with issues of race, ethnicity, gender, and national origin as hierarchical categories of identity that form an interlocking system of oppression, each reinforcing the other.
- Consider how a writer or filmmaker expresses the opportunities and limitations created by diverse conditions, asking how and why these conditions exist as they do and how they might be different.
- Consider from a literary perspective, the ways we can encourage others who are identified as working-class to consider their status in this culture and how they might create systemic changes in the ways the dominant culture (included in the American Dream) values working class art and lives.
- Focus on how working-class lives remain invisible in popular and academic realms, and how we will create a new perspective of literature and criticism that includes working class stories.
- Research and present poetry not covered in class that was written by a working-class poet and/or about working-class issues and images.
- Formally interview a working-class person who has stories about their working life and its effects on life outside of work.
- Distinguish between connotation and denotation and demonstrate how the connotative language helps shape major points of a literary text (poems, story, play).
- Demonstrate ability to use interpretive frameworks to investigate contextual meanings of literature.

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### **ENG 260 - Introduction to Women Writers**

4 Credit(s)

College-level reading and writing skills (a passing grade in WR 115 or placement into WR 121) are strongly recommended for success in this course. This course will introduce students to the richness and variety of literary works written by women. 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. Students will consider fiction written by women writers in a global context historically to the present day. The course will include an introduction to feminist literary theory and will introduce students to a variety of literary genres and styles, including the slave novel, sentimental, realistic, and postmodern fiction.

#### **Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Understand the social, political, and cultural contexts within which women have written historically and presently.
- Demonstrate an understanding of the relationship between writing and female identity.
- Demonstrate an understanding of the role that class and racial divides play in women's writing and the category of women writing".

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### **ENG 261 - Science Fiction**

4 Credit(s)

College-level reading and writing skills (a passing grade in WR 115 or placement into WR 121) are strongly recommended for success in this course. This course explores science fiction, fantasy and speculative futures through literary and popular fiction, film and guest authors. Discussions of content, styles, techniques and conventions of the genre will be central to the course.

#### **Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Articulate the major historical periods from Mary Shelley to the present.
- Use reading protocols unique to the field to enhance comprehension of texts.
- Define major critical terms in the field, including but not limited to: extrapolation, estrangement, subjectivity, novum.
- Know the major authors in the field.
- Read and identify classic themes and iconography of the field.
- Understand and be able to write about the concepts of megatext, gender and metaphone.
- Analyze short fiction for social satire and commentary.
- Appreciate the place of speculative fiction in the academic literature curriculum.
- Distinguish between the literature of science fiction and trade pulp.
- Understand the various connections between speculative fiction and the development of technology, computers, and life sciences.
- Understand the process of adaptation of a speculative fiction text to a film.
- Distinguish between connotation and denotation and demonstrate how the connotative language helps shape major points of literary text (poem, story, play).
- Demonstrate ability to use interpretive frameworks to investigate contextual meanings of literature.
- Know how to do deep reading using specific protocols.
- Keep a reading and screening Journal in a lifelong learning tool.
- Do literary analysis.
- Use both formal and informal writing to learn about literature.
- Become an informed reader of a specialized genre by applying critical language unique to the field.
- Write a critique.
- Have an intelligent conversation about a text in a small group setting.
- Write a literature research paper synthesizing multiple sources.
- Analyze, evaluate and critique the adaptation of text to film.
- Collaborate successfully on a complex academic project involving multi-media.
- Write an evaluative review using academic terms.

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### **ENG 270 - Bob Dylan: American Poet**

4 Credit(s)

College-level reading and writing skills (a passing grade in WR 115 or placement into WR 121) are strongly recommended for success in this course. This course will focus primarily on the poetry and poetics of Bob Dylan's work. Textual analysis will lead to understanding of syntax, imagery, narrative tactics, and other poetic elements. Students will gain familiarity with the range

of Dylan's poetic genres. As with any literature course, we will examine how meaning is produced through words and sound. Dylan's musical and literary sources, and his influence in our culture, will also be explored.

### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Understand Dylan's literary and musical influences.
- Recognize traditions speaking through Dylan's lyrics.
- Understand Dylan's influence on music and culture in America.
- Understand the relationships among literature, music, politics, and social issues in America.
- Understand the impact of particular poetic techniques and elements, and the variety of poetic genres.
- Understand the relationship between poetry and song, and between popular culture and literature.
- Understand the development of Dylan's art.
- Thoughtfully examine the relationship between the artist and the critic.
- Distinguish between connotation and denotation and demonstrate how the connotative language helps shape major points of a literary text (poem, story, play).
- Demonstrate ability to use interpretive frameworks to investigate contextual meanings of literature.

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### 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, comic books, and graphic novels and how they communicate, inform, and emotionally engage audiences.

### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Identify different genres and subgenres of comics and graphic novels. Recognize conventions of the form.
- Recognize graphic genres' influence on popular culture by identifying analogous visual/verbal configurations to course texts.
- Situate course texts within their cultural, political, and historical contexts.
- Recognize and relate how visual/verbal representation can communicate the struggle for human dignity in the face of oppression.
- Apply concepts learned in theoretical readings, lectures, and discussions of visual storytelling to their educational experience.
- 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.
- Describe, compare, and classify at least three different forms of graphic storytelling encountered in the class and relate their aesthetic, cultural, or historical meaning.
- Perform formal analyses of a narrative medium that combines visual and verbal elements in a unique way.
- Analyze how the visual and verbal elements combine to produce complex meaning that is distinct from that produced in genres that use words only.

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## 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:

- 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.
- 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.

- 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.
- 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.
- 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.
- 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.
- 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.

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### 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:

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.



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**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:

- Understand theory and principles of decolonized leadership.
- Demonstrate practical and personal usage of the concepts and strategies learned to affect positive social change.
- Apply concepts of “grassroots” leadership learned in this course to develop and enhance personal problem-solving skills.

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**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:

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.

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**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:

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.

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**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:

- 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.
- 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.
- 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.
- 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.

- 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.
- 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.
- 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.

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**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:

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.

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**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:

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.

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**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:

- Be able to look at, and understand, current social phenomenon, using the framework of historical and social context.
- Be able to differentiate between personal opinion and the science-based information found in the cannon of ethnic studies.
- Know how their cultural values, personal values, and beliefs shape their worldview.
- Know how to apply the concepts, themes, theories, presented in the class, to their lives as active citizens.

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**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;

- Understand non-linear approaches to knowledge.
- Challenge and critique hegemonic knowledge.
- Understand indigenous epistemology and ontology.
- Build leadership skills and self-efficacy.

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## Fabrication and Welding

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### 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:

- Be able to identify basic lines and views.
- Be able to describe the purpose and processes of dimensioning.
- Be able to identify and explain notes, specifications and abbreviations.
- Recognize and describe various metal structural shapes.
- Be able to recognize and explain detail and assembly prints.
- Be able to interpret typical welding symbols.

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### 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, the student should be able to:

- Identify all views commonly found on blueprints used by welders/fabricators.
- Identify common structural steel shapes as drawn on blueprints.
- Identify all lines typically used to construct blueprints.
- Conceptually integrate all views on a blueprint into the finished product.
- Interpret welding and other symbols used on blueprints.
- Make isometric and orthographic "shop drawings" of simple objects.

#### Shop Fabrication:

- Do pre-forming layout procedures, pre-fabrication, assembly processes and correctly route manpower and equipment.
- Safely, correctly, and accurately operate several shearing, cutting and hole producing machines.
- Demonstrate the ability to safely, correctly, and accurately use a variety of manual and powered hand tools.
- Recognize areas of steel fabrication where punching can replace drilling and patterns or jigs can replace layout procedures.
- Plan sequencing and expediting procedures similar to those utilized by industry.
- Safely and efficiently move and handle materials using powered fork trucks and overhead crane.

#### Shielded Metal Arc Welding:

- Perform oxy-fuel cutting and electric welding in a manner that demonstrates concern for the safety and welfare of themselves, others and property.
- Cut steel to product dimensions using the manual and semi-automatic oxyacetylene cutting process.
- Metallic arc weld in the four standard welding positions, flat, horizontal, overhead, and vertical, on practice pieces and products.
- Remove welds using the air-carbon arc process.

#### Wire Drive Welding:

- Set GMAW machine controls to effect short arc and spray arc metal transfer while using solid wire of various sizes.
- Select and properly connect to a GMAW power source appropriate

shielding gases necessary to short arc and spray arc metal transfer.

- Prepare typical industrial weld joints, make welds on these joints, and on other metal products, 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.
- Identify the type, cause and solution to weld defects typically associated with GMAW short arc and spray arc metal transfer.
- Perform minor maintenance on GMAW equipment associated with the contact tip, liner and drive rolls.

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### 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, the student should be able to:

- Make isometric and orthographic "shop drawings" of metal products.
- Prepare detailed parts lists from structural blueprints.
- Make full size layouts from blueprints applying appropriate welding symbols.
- Apply geometric principles to standard layout procedures.
- Calculate weights of individual parts and assembled products.
- Interpret conventional print symbols and abbreviations.

#### Shop Fabrication:

- Layout and prepare parts, fit, weld and finish to industry standards various metal products.
- Safely, correctly, and accurately operate several shearing, forming and hole producing machines.
- Demonstrate the ability to safely, correctly, and accurately use a variety of manual and hand-powered tools.
- From prints, develop material cost estimates for structural steel products based on weight.
- Safely and efficiently, move and handle material using powered fork trucks and overhead crane.
- Plan sequencing and expediting procedures similar to those utilized by industry.

#### Shielded Metal Arc Welding:

- Perform oxy-fuel cutting and electric welding in a manner that demonstrates concern for the safety and welfare of themselves, others, and property.
- Cut steel to product dimensions using the manual, and semi-automatic oxy-fuel cutting processes.
- Remove welds and prepare weld joints using the air carbon arc process.
- Metallic arc weld using a variety of mild steel electrodes in the four standard welding positions: flat, horizontal, overhead, and vertical, on practice pieces and products.

#### Wire Drive Welding:

- Make power source adjustments necessary to the effective operation of large and small diameter ferrous gas shielded flux-cored welding processes.
- Identify the type, cause and solution to weld defects typically associated with cored wire drive processes.
- Prepare materials, outline testing procedures, make welds, prepare specimens, and conduct tests in accordance with standards established by the American Welding Society.
- Demonstrate proficiency to industrial levels when using ferrous flux-cored gas shielded wire processes when welding practice materials and metal products in all four welding positions.
- Perform destructive and non-destructive tests on weldments.
- Perform minor maintenance on FCAW equipment associated with the contact tip, liner and drive rolls.

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### 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 the student should be able to:

- Make bills of material from blueprints.
- Extend material lists in standard form for quantity totaling.
- Obtain material price quotes.
- Prepare final estimates of material and labor for bid or purchase.
- Initiate standard bidding procedures.
- Utilize computer software to assist in estimating costs.

#### **Shop Fabrication:**

- Layout, cut, drill/punch, fit, weld and align pipe flanges.
- Layout, cut, fit, weld and finish various structural steel materials to specified standards.
- Use various metal working machines to form steel materials to specified standards.
- Develop jigs and fixtures for the purpose of fitting and welding structural metal products.
- Plan sequencing and expediting procedures similar to those utilized by industry. 1
- Perform oxy-fuel cutting and electric arc welding in a manner that demonstrates concern for the safety and welfare of themselves and others and property.

#### **Shielded Metal Arc Welding:**

- Perform oxy-fuel cutting and electric arc welding in a manner that demonstrates concern for the safety and welfare of themselves and others and property.
- Cut steel to product dimensions using manual, and semi-automatic oxy-fuel cutting torches.
- Metallic arc weld, using E7018 electrodes, in the four standard welding positions, flat, horizontal, overhead, and vertical, on practice pieces and products.
- Prepare materials, outline testing procedures, make welds, prepare and test metal coupons in conformance with procedures established by the American Welding Society.

#### **Wire Drive Welding:**

- Make power source adjustments necessary to the effective operation of FCAW-SS, GMAW short arc, and spray transfer modes.
- Identify the type, cause and solution to weld defects typically associated with wire drive processes.
- Prepare materials, outline testing procedures, make welds, prepare test specimens, and execute testing consistent with standards established by the American Welding Society.
- Demonstrate proficiency when welding with FCAW-SS, ferrous and GMAW, to a level equal to, or better than, welders who are industrially experienced in these processes.

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#### **WLD 121 - 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:

- Perform welding in a manner that demonstrates concern for safety and welfare for self, others and property.
- Cut steel to project dimensions using manual oxyacetylene cutting torch.
- Metallic arc weld in the four standard positions: (flat, horizontal, overhead, and vertical) on all assigned projects.

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#### **WLD 122 - Shielded Metal Arc Welding 2**

1-4 Credit(s)

Skill development in electric arc welding. 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 successful student will be able to:

- 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.
- Cut materials to size with the use of manual and semi-automatic oxyacetylene cutting equipment.
- Arc weld adequately in the completion of assigned projects in the four standard positions: (flat, horizontal, overhead, and vertical).

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#### **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:

- Gain additional proficiency in SMAW, GMAW, FCAW and/or GTAW.

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#### **WLD 140 - Welder Qualification (Cert): Wire Drive Processes**

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 wire drive processes. Course includes AWS D1.1 Welder Qualification Test.

**Prerequisite:** WLD 143 or WLD 154 or WLD 112 or WLD 113 or WLD 114 or instructor consent.

#### **Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Explain the purpose, legal implications and functions of pre-qualified and welder qualification code tests.
- Explain the code test variables found on Procedure Qualification Data Sheets.
- Explain the extent and limitations of the applicability of a particular code test.
- Explain the difference between a procedure and pre-qualified code test.
- Correctly prepare and assemble materials to be welded to code test standards.
- Weld plate or pipe to AWS or ASME code standards using wire drive processes.
- Pass an AWS or ASME Welder Qualification Test using a wire drive welding process.
- Prepare to AWS or ASME standards welded-to-code coupons for guided bend testing.

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#### **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 or WLD 113 or WLD 114 or instructor consent.

#### **Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Explain the purpose, legal implications and functions of pre-qualified and welder qualification code tests.
- Explain the code test variables found on Procedure Qualification Data Sheets.
- Explain the extent and limitations of the applicability of a particular code test.
- Explain the difference between a procedure and pre-qualified code test.
- Correctly prepare and assemble materials to be welded to code test standards.
- Weld plate or pipe to AWS or ASME code standards using the SMAW process.
- Pass an AWS or ASME Welder Qualification Test using the SMAW process.
- Prepare to AWS or ASME standards welded-to-code coupons for guided bend testing.

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**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.

**Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Be able to prepare pipe coupons for welding according to AWS standards.
- Be able to weld pipe coupons according to AWS standards.
- Be able to prepare pipe coupons for testing according to AWS standards.
- Test and have pass pipe coupons according to AWS standards.

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**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.

**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:

- Set GMAW machine controls to effect short arc, spray arc and pulsed arc metal transfer while using solid wire of various sizes.
- Select and properly connect to a GMAW power source appropriate shielding gases necessary to short arc and spray arc metal transfer.
- 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.
- Identify the type, cause, and solution to weld defects typically associated with GMAW short arc, spray arc and pulsed arc metal transfer.
- Perform minor maintenance on GMAW equipment associated with contact tip, liner and drive rolls.

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**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.

Upon successful completion of this course, the student should be able to:

- Identify various types of the more common commercial metals by two or more methods.
- Describe the basic atomic and crystalline structure of metals.
- Describe at least five mechanical, physical, and chemical properties of metals.
- Describe the effects of alloying elements.
- Perform the heat-treating processes of annealing, normalizing, quench hardening, tempering, stress relieving and other metal working processes.
- Explain the effects of expansion and contraction during temperature changes in structural shapes, fabricated frames and machinery.
- Determine the weld ability of various metals and describe an appropriate welding procedure and process for those metals.
- Demonstrate or describe processes and applicability of preheating and post heating for various metals.
- Describe fluxes, slags, and shielding gases and their effects on weldments.

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**WLD 154 - Wire Drive Welding 2**

1-4 Credit(s)

Technology and application of wire drive process using gas shielded cored wire is taught. Preparing weld test specimens and performing weld tests is included in this course.

**Prerequisite:** WLD 143 or instructor consent.

**Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Explain the performance differences between cored and solid wire electrodes.
- Make power source adjustments necessary to the effective operation of

large and small diameter ferrous gas shielded and self-shielded flux-cored welding processes.

- Identify the type, cause and solution to weld defects typically associated with cored wire drive processes.
- Prepare materials, outline testing procedures, make welds, prepare specimens, and conduct tests in accordance with standards established by American Welding Society.
- Demonstrate proficiency to industrial levels when using ferrous flux-cored gas shielded and self-shielded wire processes to weld plate and other structural materials.

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**WLD 159 - Wire Drive Welding 3**

1-4 Credit(s)

Technology and application of the wire drive process using self shielded cored wire is taught. Preparing weld test specimens and performing weld tests is included in this course.

**Prerequisite:** WLD 143 or instructor consent.

**Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Explain and demonstrate the effects of various industrial shielding gases on performance parameters of ferrous and non-ferrous solid electrodes.
- 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).
- Identify the type, cause and solution to weld defects typically associated with wire drive processes.
- Prepare materials, outline testing procedures, make welds, prepare test specimens, and execute testing consistent with standards established by American Welding Society.
- 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.

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**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:

- Fit and tack typical industrial weld joints.
- Use the GMS process with various shielding gases and metal transfer modes to weld typical industrial joints to entry-level standards.
- Use the FCAW-G process and various shielded gases and metal transfer modes to weld typical industrial joints to entry-level standards.
- Test weld coupons using various equipment.
- Demonstrate, in written form, knowledge of the technology associated with GMAW and FCAW-G welding.

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**WLD 215 - Fabrication/Welding 4**

12 Credit(s)

This course instructs in the skills and technology associated with fabrication of metal products. Welding practice is provided in wire drive, SMAW and GTAW processes. Fabrication skills taught include blueprint reading, metal layout, part preparation, assembly and final finishing. Also studied are concepts in ferrous metallurgy and their applications.

**Prerequisite:** Second year standing or instructor consent.

**Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Make shop drawings.
- Read and apply industrial blueprints.

**Shop Fabrication:**

- Identify symbols and shapes of structural steels.
- Read and apply industrial blueprints.
- Use pitch lines, beam boards, web wages, and miter techniques to layout structural steel.
- Cope, fit, and weld various structural steel shapes.
- Fabricate and weld metal products.
- Demonstrate safe and effective use of shop tools.

**Metallurgy:**

- Identify various types of the more common commercial metals by two or more methods.
- Describe physical, mechanical and chemical properties of carbon and alloy.
- Describe the purpose, write procedures and perform heat treating processes commonly used with carbon and alloy steels.
- Explain the dynamics and implement procedures for the control of thermally induced expansion/contraction stresses in steel.
- Use non-destructive and destructive testing procedures to evaluate base metal properties.

**Welding: Shielded Metal Arc Welding:**

- 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.
- Layout, cut, tack typical industrial weld joints, and makes welds on these joints.
- Make industrially acceptable welds on various structural materials.
- Perform non-destructive and destructive weld tests on steel weldments.
- Critique welds identifying causes of, and solutions to, various weld defects.

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**WLD 216 - Fabrication/Welding 5**

12 Credit(s)

This course instructs in the skills and technology associated with fabrication of metal products. Welding practice is provided in wire drive, SMAW and GTAW processes. Fabrication skills taught include blueprint reading, metal layout, part preparation and assembly and final finishing. Also studied are concepts in ferrous metallurgy and their applications especially pertaining to welding of carbon and stainless steel.

**Prerequisite:** Second year standing or instructor consent.

**Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Make shop drawings.
- Read and apply industrial blueprints.

**Shop Fabrication:**

- Identify by schedule number various pipes.
- Layout, cut, fit, and weld various pipe joints.
- Layout, cut, fit, and weld pipe flanges.
- Fabricate from blueprints and shop drawings metal products.

**Programmable Metal Processing Equipment:**

- Set-up, program and operate computer controlled metal processing equipment.
- Edit computer programs to alter cutting and bending parameters on programmable equipment.
- Perform basic maintenance on computer controlled metal processing equipment.

**Applied Metallurgy:**

- For plain carbon and HSLA steels determine weldability and write appropriate welding procedures.
- Research and demonstrate appropriate pre-weld and post-weld heating procedures for plain carbon and HSLA steels.
- Describe effects of various welding shielding gases, fluxes and slags on weldments.
- Use non-destructive and destructive testing procedures to evaluate weld and base metal properties.
- Identify various stainless steel and aluminum alloy groups using visual methods and metal analysis tools.
- Describe in writing the effects of alloying elements on the physical, mechanical and chemical properties of stainless steels and aluminum alloys.
- Use tables to develop and perform various heat treating procedures for stainless and /or aluminum alloys.
- 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:**

- Weld SMAW projects and products.

**Gas Metal Arc Welding:**

- Weld GMAW projects and products. Flux Cored Arc Welding, Gas Shielded:
- 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.

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**WLD 217 - Fabrication/Welding 6**

12 Credit(s)

This course instructs in the skills and technology associated with fabrication of metal products. Welding practice is provided in wire drive, SMAW, and GTAW processes. Fabrication skills taught include blueprint reading, metal layout, part preparation and assembly and final finishing. Also studied are aluminum metallurgy concepts in wear analysis, selection and application of wear or corrosion resisting surface treatments in addition to applied aluminum metallurgy. This course includes practice and testing for AWS D1.1 Welder Qualification Exams.

**Prerequisite:** Second year standing or instructor consent.

**Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Make shop drawings.
- Read and apply industrial prints.
- Evaluate for cost from industrial prints.

**Shop Fabrication:**

- Fabricate from blueprints and shop drawings various metal products. Introduction to Business Practices:
- Identify component parts of a successful metal fabrication business.
- Correctly describe the sequencing of production and the interrelationship of production, business administration and marketing functions.
- Estimate costs to build various metal products.

**Wear Environments and Surface Applications:**

- Identify common wear environments including appearance and associated dynamics.
- Select from industrial catalogues electrodes and other materials appropriate to metals in specified wear environments.
- Demonstrate various techniques for the application of hard facing and corrosion resisting materials.

**Welding:**

- Weld various Shielded Metal Arc electrodes on projects and products.
- Weld various wire drive electrodes on projects and products.
- Gas Tungsten Arc Weld various projects and products.

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**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.

**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:

- Set GMAW machine controls to weld all steel alloys of various thicknesses.
- Layout, cut and tack typical industrial weld joints and make welds on these joints in the four standard positions.
- Make industrial acceptable welds on various structural materials including sheet, plate, tubing and pipe products.
- Perform non-destructive and destructive weld tests on steel weldments.
- Critique welds identifying causes of, and solutions to, various defects.

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**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:** WLD 242 or Instructor consent.

### Learning Outcomes

Upon completion of this course, the successful student will be able to:

- Set GMAW machine controls to weld carbon and stainless steel alloys of various thicknesses using both argon and helium shielding gases.
- Layout, cut and tack typical industrial weld joints and make welds on these joints in the four standard positions.
- Weld carbon steel and stainless steel with machine controlled pulsing arc. Make welds on carbon steel and stainless steel materials.
- Perform non-destructive and destructive weld tests on carbon and stainless steel alloy weldments.
- Critique welds identifying causes of, and solutions to, various defects.

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### 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 242 and WLD 256.

### Learning Outcomes

Upon completion of this course, the successful student will be able to:

- Set GMAW machine controls to weld aluminum alloys of various thicknesses using both argon and helium shielding gases.
- Layout, cut and tack typical industrial weld joints and make welds on these joints in the four standard positions.
- Weld aluminum with machine controlled pulsing arc. Make welds on aluminum sheet and tubing materials.
- Perform non-destructive and destructive weld tests on aluminum alloy weldments.
- Critique welds identifying causes of, and solutions to, various defects.

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## Film Arts

### FA 221 - Computer Animation

4 Credit(s)

This course covers the historical beginnings of animation from flipbooks to film. It allows students an opportunity to explore the application of animation from business presentations to entertainment. This is a projected oriented, hands-on course, which gives students an opportunity to design and produce 3D computer animation projects. The course will emphasize 2D animation tools and techniques and introduce 3D modeling and animation tools techniques.

### Learning Outcomes

Upon successful completion of this course, the student will be able to:

- Define and apply the general principles and demonstrate an understanding of the technical aspects of 2D animation.
- Define and apply the general principles and demonstrate an understanding of the technical aspects of 3D modeling and animation.
- Demonstrate the proper use and application of 3D software tools.
- Design, produce and output a 3D animation incorporating the general principles and techniques of modeling, texturing and lighting.

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### 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:

- Define and apply the general principles and demonstrate an understanding of the technical aspects of 3D object modeling, texturing and lighting
- Define and apply the general principles and demonstrate an understanding of the technical aspects of scene composition and animation.
- Define and apply the general principles and demonstrate an understanding of the technical aspects of render types and rendering strategies.
- Create, render and animate a 3D character walk-cycle sequence.

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### 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:

- Distinguish between the form and content of visually mediated messages.
- Discuss theories of representation in relationship to the design and evaluation of visually mediated messages.
- Define elements of two-dimensional composition and discuss their relevance to the design of visually mediated messages.
- Describe the manipulation of time through editing and discuss its relevance to the design of visually mediated messages.
- Define types of motion and discuss their relevance to the design of visually mediated messages.
- Discuss elements of lighting and their relevance to the design of visually mediated messages.
- Define types of sound and discuss their relevance to the design of visually mediated messages.

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### 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:

- Identify the basic safety requirements that need to be followed when working with lighting fixtures and electricity in a test situation with 80% accuracy.
- 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.
- Explain the differences of latitude and application of lighting ratios to photography, film and video in a test situation with 75% accuracy.
- Produce a multiple light set-up utilizing studio lighting grid in accordance with industry standards.
- 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.
- Produce a series of three different multiple light set-ups maintaining the same lighting ratio in a location setting according to instructors standards.
- Produce a balanced (color) lighting set-up when using mixed (color temperature) lighting sources on location according to instructor's standards.
- 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.

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### 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. May be offered as a telecourse.

### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Discuss the major events shaping American film history from the silent era through the present day.
- Utilize the basic technical and critical vocabulary of motion pictures.
- Discuss how the technology of cinema relates to film art.
- Describe the economic structure of the film industry.
- Evaluate their own role as passive spectators, thereby increasing their ability to watch films actively and critically.
- Enhance their ability to think, speak and write critically about the role of film in an increasingly visual and technological culture.

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**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:

- Work in studio environment and on location.
- Be able to work with equipment, basic set-ups, metering and shooting portraits and basic commercial products.
- Have a basic understanding of camera and lens variations.
- Understand film stock and traditional cameras.
- Understand digital output and editing.
- The elements needed to produce professional quality portfolio appropriate for presentation.

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**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 a short multimedia project involving text, graphics, illustrations, animation, video, sound, links, and search mechanisms. May be offered online.

**Prerequisite:** WR 121 or WR 121\_H and ART 216

**Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Discuss the applications of multimedia to education, training, communication, marketing, art, performance, and entertainment.
- Define the role of the writer in the multimedia project team.
- Compare and contrast traditional media scripting methods with scripts which foster interactivity.
- Discuss the role of authoring tools in the design of multimedia projects.
- Define the stages involved in the development process for multimedia projects.
- Write a proposal for a multimedia project which defines the projects objectives, target audience, content and demonstrates the interface design.
- Storyboard a short multimedia project revealing its use of screen layouts, text, graphics, illustrations, animation, video, sound, links, and search mechanisms.
- Produce a short multimedia project based on the students proposal, flow chart, and storyboard.

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**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 women-authored cinema in the context of race, ethnicity, gender, sexuality, and class. Texts span the silent period to the present. Students may plan on attending either of two screening options: Monday 3-5 or Thursday 5-7.

**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:

- Explain women's contributions to cinema.
- Describe the ideological implications of films in terms of race, gender, ethnicity, sexuality, ability, nation, and class.
- Recognize and describe the multiplicity & diversity of women filmmakers' choices in terms of narrative content and cinematic style.
- Use a social, aesthetic, technological, or economic lens to analyze film(s).
- 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.
- Apply an understanding of film language in the analysis of women s cinema .

- Write meaningfully about the formal and ideological issues of the films studied during the quarter.

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**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. Students may attend one of the weekly screenings.

**Learning Outcomes**

Upon completing this course the student should be able to:

- Understand and apply one or more of the theories of genre studied during the term.
- Explain the larger socio-historical and generic con text from which the chosen films emerge and which helps to shape them.
- Explain the ideological implications of the genre and representative texts in terms of race, gender, ethnicity, sexuality, ability, and class.
- Apply a framework and formal cinematic vocabulary for thinking and talking about the genre.
- Recognize and be able to describe narrative and stylistic conventions of representative texts.
- Identify, evaluate, and analyze significant examples of the genre studied.
- Write meaningfully about the formal, generic, and ideological issues of the films studied during the quarter.

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**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. Students may attend one of the weekly screenings.

**Learning Outcomes**

Upon completing this course the student should be able to:

- Understand and apply one or more of the theories of genre studied during the term.
- Explain the larger socio- historical and generic con text from which the chosen films emerge and which helps to shape them.
- Explain the ideological implications of the genre and representative texts in terms of race, gender, ethnicity, sexuality, ability, and class.
- Apply a framework and formal cinematic vocabulary for thinking and talking about the genre.
- Recognize and be able to describe narrative and stylistic conventions of representative texts.
- Identify, evaluate, and analyze significant examples of the genre studied.
- Write meaningfully about the formal, generic, and ideological issues of the films studied during the quarter.

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**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. Students may attend one of the weekly screenings.

**Learning Outcomes**

Upon completing this course the student should be able to:

- Understand and apply one or more of the theories of genre studied during the term
- Explain the larger socio- historical and generic con text from which the chosen films emerge and which helps to shape them
- Explain the ideological implications of the genre and representative texts in terms of race, gender, ethnicity, sexuality, ability, and class
- Apply a framework and formal cinematic vocabulary for thinking and talking about the genre
- Recognize and be able to describe narrative and stylistic conventions of representative texts
- Identify, evaluate, and analyze significant examples of the genre studied
- 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)

FA 276 is a cinema course 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:** Suggested 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.
  - Apply a cinematic language in the analysis of cinematic texts.
  - 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).
  - Use a theoretical lens in order to analyze representation of gender, race, class, and sexuality in U.S. cinema.
  - Be able to discuss the economic, industrial and aesthetic systems that have privileged dominant modes of storytelling.

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**Fitness and Lifestyle Specialist**

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**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 should be able to:

- Differentiate and apply the scope of practice for fitness professionals when giving advice about nutrition and when to refer to a dietitian.
- Analyze and consider nutrition information to determine validity and practicality.
- Interpret how cultures and traditions affect food choices to assist clients in selecting healthier diets.
- Utilize effective and motivational communication when providing nutrition, wellbeing and weight loss, gain or management guidance with clients.
- Demonstrate how to educate a diverse range of clients on methods and techniques of optimum nutrition.
- Determine how to optimize clients' needs, wants, goals and decisions with safe and effective nutrition recommendations.
- Identify strategies for food access, procurement, preparation, and safety for clients.

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**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:

- Recognize the basic components of fitness, common field assessments, and the relationship between physical activity and health
- Demonstrate the skills and knowledge necessary to assess basic fitness components
- Understand the current trends, growth, and technology of fitness-related career fields
- Demonstrate the ability to develop exercise prescriptions for both general and special populations
- Research, recognize, and analyze current fitness-industry practices,

trends and current topics of importance to the industry

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**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:

- Apply principles and concepts of aerobic and anaerobic exercise training in developing exercise programs for a variety of clients
- Apply principles and concepts of strength and conditioning exercise, using a variety of exercise modalities, in developing exercise programs for a variety of clients
- Identify and then apply a variety of different exercise programming options
- Demonstrate the components of a proper warm-up, cool down and flexibility program
- Able to analyze exercise technique and choose exercises which are effective and safe
- To develop the ability to analyze exercise equipment and machines for their safety and efficiency
- Demonstrate the knowledge, skills and abilities needed to develop and instruct individual and group exercise sessions
- Design appropriate, safe, and effective exercise programs in a variety of settings for a variety of clientele

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**FLS 140 - Applied Exercise Physiology 1**

3 Credit(s)

This course introduces FLSEXMS 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:

- Describe basic functioning of physiological systems including: circulatory, respiratory, nervous, skeletal and muscular.
- Explain how these physiological systems respond and adapt to acute exercise and long term physical training.
- Differentiate between aerobic and anaerobic metabolic processes and different fuel sources for energy.
- Apply the above concepts to physical activity.

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**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.

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**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:

- Use proper anatomical and kinesiological terminology.
- Identify bony anatomy, joints and ligaments/tendons.
- Identify muscular anatomy including origins, insertions and actions.
- Identify joint motions, the muscles that initiate them, and the planes and axes in which they occur.
- Identify synergist and antagonist muscles.
- Identify and apply knowledge of muscle contractions including how muscles function in isometric, isotonic, isokinetic, concentric and eccentric contractions.

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**FLS 170 - Mental Dynamics of Exercise and Sport**

3 Credit(s)

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. May be offered online.



## Learning Outcomes

Upon successful completion of this course, students will be able to:

- Acquire an understanding of the major issues and concepts pertaining to the mental dynamics of exercise and sport.
- Be able to take exercise and sport psychology theory into practice as a professional in the field.
- Engage in discovery, independent critical thinking, and communication of ideas by through meaningful discussion and projects.
- Apply appropriate exercise and sport theories, skills, and techniques to one's own sport and exercise experiences.
- Apply appropriate exercise and sport theories, skills, and techniques to clients and athletes.
- Develop and apply appropriate strategies and techniques designed to prevent exercise and sport burnout and over training.

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## 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:

- Examine various programming and business models within the fitness industry.
- Describe key personnel issues and practices.
- Understand and apply different fitness industry marketing and branding strategies.
- Outline components of facility design, planning, resource management and equipment purchasing.
- Identify risk management issues, including safety, legal liability, and insurance requirements.
- Explore various fitness industry resources and technology.
- Develop a personal business plan.
- Create a quality resume and demonstrate effective interview techniques

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## FLS 190 - Injury Prevention and Management

3 Credit(s)

Prerequisite: FLS160 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:

- Properly use anatomical and kinesiological terminology.
- Understand and analyze the physiological processes of inflammation and pain.
- Understand and apply a joint-by-joint approach to warm-up and training.
- Demonstrate knowledge of and the ability to manage common orthopedic injuries in conjunction with appropriate allied health care team members.
- Develop exercise progressions for major regions of the body.
- Develop instructional handouts for home exercise programs.
- Demonstrate knowledge of safe lifting and gait mechanics

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## FLS 195 - Interdisciplinary Practicum

1-3 Credit(s)

Prerequisite: Program Admissions Supervised practicum in a professional fitness, physical education, aerobic fitness, athletic training, athletics, coaching, corrective fitness, fitness management, recreation, wellness, or other similar program, on campus. Weekly logs and other written assignments may be required. The work-site supervisor will orient, direct, instruct and evaluate the student's performance. The instructor will meet on-site with the student's supervisor, discuss student performance, and do a final evaluation at the end of the term. Students will evaluate their progress at the end of the experience. Instructor approval required for practicum site and credit load.

**Prerequisite:** Admission into program

### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Integrate classroom learning with field experience by demonstrating skills in real-world applications

- Gain work experience in the student's career field, and apply their knowledge and skills in a work setting which can be included as part of their work history on resumes and applications.
- Be exposed to advanced skills and knowledge by learning and utilizing alternative practices gained from work- site experience.
- Develop foundation workplace competencies by demonstrating core level work skills such as team-work, reliability, responsibility, following instructions and supervision, initiative, and essential communication skills.
- Be exposed to job opportunities and potentials; clarify and confirm career goals and have an increased awareness/understanding of (the rewards/ drawbacks/ opportunities related to their career goals.
- Demonstrate knowledge of workplace culture through appropriate attire, behavior and communications.

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## 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. May be offered online.

### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- 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).
- Compare and contrast different theories of aging.
- Differentiate between the major body systems affected by the aging process (i.e., cardiorespiratory, musculoskeletal, nervous and sensory).
- Understand the relationship between proper nutrition and specific elderly groups.
- Recognize the common diseases involved with aging.
- Consider adaptability of fitness training to elderly populations focusing on the functional approach, aerobic and non-aerobic fitness and muscular fitness.
- Analyze fitness programming as it applies to elderly populations.

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## Flight

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### FT 102 - General Aviation Careers

1 Credit(s)

A survey of general aviation career areas, both flying and non-flying, as presented by a variety of guest speakers from the aviation industry. Class attendance is mandatory for credit; this is not a graded course.

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### FT 103 - Aircraft Safety Development

4 Credit(s)

Views aviation safety development through 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. Student exits course able to apply safety lessons to flight operations.

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### FT 115 - Aircraft Structures and Systems

3 Credit(s)

Designed to give a pilot a thorough understanding of airplane systems and structural design.

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### FT 121 - UA Platforms and Systems

4 Credit(s)

This course gives students an overview of the platforms and systems used in small unmanned aircraft. It will encompass both fixed wing and multi-rotor aircraft and look at the subsystems of these aircraft. There will be simulator and hands-on training provided in the lab portion of the class.

### Learning Outcomes

- The student will be able to: Determine the best unwanted aircraft platform to use depending on application and a basic hands-on-knowledge of platform operation and subsystems of unarmed aircraft.

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### FT 122 - UA Ground Control Systems

4 Credit(s)

This course gives students an overview of the Ground Control Station (GCS) used in unmanned aircraft. It will encompass both mobile and permanent GCS's

and encompass multiple launch and recovery systems. There will be simulator and hands-on training provided in the lab portion of the class.

**Learning Outcomes**

- The student will be able to: communicate with ATC, plan safe flights in the national airspace system, and understand basic UA launch and recovery systems

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**FT 123 - Commercial UAS Ground School**

1 Credit(s)

This course is designed to help students prepare to take the FAA UAS written examination in order to get their Remote Pilot Airman's Certificate. It will be divided into five parts: Aircraft Operation, Regulations, National Airspace System, Weather, and Performance.

**Learning Outcomes**

- The student will be able to: pass the FAA UAS Commercial Written Test for their Commercial UAS Operators License.

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**FT 124 - UAS Flight Lab**

1-6 Credit(s)

This course will act as the hands on portion of all elective UAS courses in the form of multiple TCO's. This course will emphasize safety of flight through the use of UAS and FAA regulations. Students will learn to operate fixed wing and multi-copter UA's.

**Learning Outcomes**

- The student will be able to demonstrate the ability to operate a UAS

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**FT 124A - UAS Flight Lab**

1 Credit(s)

This course will act as the hands on portion of all elective UAS courses in the form of multiple TCO's. This course will emphasize safety of flight through the use of UAS and FAA regulations. Students will learn to operate fixed wing and multi-copter UA's.

**Learning Outcomes**

- The student will be able to demonstrate the ability to operate a UAS

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**FT 124B - UAS Flight Lab**

1 Credit(s)

This course will act as the hands on portion of all elective UAS courses in the form of multiple TCO's. This course will emphasize safety of flight through the use of UAS and FAA regulations. Students will learn to operate fixed wing and multi-copter UA's.

**Prerequisite:** FT 124A

**Learning Outcomes**

- The student will be able to demonstrate the ability to operate a UAS

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**FT 124C - UAS Flight Lab**

1 Credit(s)

This course will act as the hands on portion of all elective UAS courses in the form of multiple TCO's. This course will emphasize safety of flight through the use of UAS and FAA regulations. Students will learn to operate fixed wing and multi-copter UA's.

**Prerequisite:** FT 124B

**Learning Outcomes**

- The student will be able to demonstrate the ability to operate a UAS

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**FT 124D - UAS Flight Lab**

1 Credit(s)

This course will act as the hands on portion of all elective UAS courses in the form of multiple TCOs. This course will emphasize safety of flight through the use of UAS and FAA regulations. Students will learn to operate fixed wing and multi-copter UAs.

**Prerequisite:** FT 124C

**Learning Outcomes**

- The student will be able to demonstrate the ability to operate a UAS

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**FT 124E - UAS Flight Lab**

1 Credit(s)

This course will act as the hands on portion of all elective UAS courses in the form of multiple TCOs. This course will emphasize safety of flight through the use of UAS and FAA regulations. Students will learn to operate fixed wing and multi-copter UAs.

**Prerequisite:** FT 124D

**Learning Outcomes**

- The student will be able to demonstrate the ability to operate a UAS

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**FT 124F - UAS Flight Lab**

1 Credit(s)

This course will act as the hands on portion of all elective UAS courses in the form of multiple TCO's. This course will emphasize safety of flight through the use of UAS and FAA regulations. Students will learn to operate fixed wing and multi-copter UA's.

**Prerequisite:** FT 124E

**Learning Outcomes**

- The student will be able to demonstrate the ability to operate a UAS

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**FT 130 - Primary Flight Briefing**

3 Credit(s)

This course will help students to master key areas of aeronautical knowledge necessary to progress efficiently toward the Private Pilot Certificate. May be offered online with instructor approval.

**Prerequisite:** Testing: minimum reading score of 68.

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**FT 141 - Pt 141 Private Pilot Stage 1 Pre-solo Flight and Ground Lecture**

6 Credit(s)

Students will develop aeronautical knowledge and flight proficiency for all FAA pre-solo requirements through ground and airborne lecture, culminating with the initial solo flight.

**Prerequisite:** Instructor consent

**Learning Outcomes**

- Student will be able to fly solo and have the skill to analyze and respond safely to any normal or abnormal flight situation.

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**FT 141W - Pt 141 Private Pilot Stage 1 Pre-solo Flight and Ground Lecture**

6 Credit(s)

Students will develop aeronautical knowledge and flight proficiency for all FAA pre-solo requirements through ground and airborne lecture, culminating with the initial solo flight.

**Prerequisite:** Instructor consent

**Learning Outcomes**

- Student will be able to fly solo and have the skill to analyze and respond safely to any normal or abnormal flight situation

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**FT 142 - Pt 141 Private Pilot Stage 2 Post-solo Flight and Ground Lecture**

3 Credit(s)

Student will develop basic navigation skills and develop the ability to fly precision short and soft field patterns and landings, with skills developed by direct instruction on the ground and in the aircraft.

**Prerequisite:** FT 141 or instructor consent

**Learning Outcomes**

- Student will be able to fly precision short and soft field patterns and landings and develop basic navigation skills

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**FT 142W - Pt 141 Private Pilot Stage 2 Post-solo Flight and Ground Lecture**

3 Credit(s)

Student will develop basic navigation skills and develop the ability to fly precision short and soft field patterns and landings, with skills developed by direct instruction on the ground and in the aircraft.

**Prerequisite:** FT 141W or instructor consent

**Learning Outcomes**

- Student will be able to fly precision short and soft field patterns and landings and develop basic navigation skills

---

**FT 143 - Pt 141 Private Pilot Stage 3 Cross-country and Certification prep Flight and Ground Lecture**

3 Credit(s)

Student will practice cross-country navigation, practice flying by reference to instruments, fly and navigate at night, and be fully trained to fly all required tasks on the FAA Private Pilot Certification to Airmen Certification Standards.

**Prerequisite:** FT 141 or instructor consent

**Learning Outcomes**

- Student will be prepared to answer all knowledge questions and able to perform all required flight tasks to proficiency requirements of the FAA Private Pilot Airmen Certification Standards

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**FT 143W - Pt 141 Private Pilot Stage 3 Cross-country and Certification prep Flight and Ground Lecture**

3 Credit(s)

Student will practice cross-country navigation, practice flying by reference to instruments, fly and navigate at night, and be fully trained to fly all required

tasks on the FAA Private Pilot Certification to Airmen Certification Standards.

**Prerequisite:** FT 141W or instructor consent

**Learning Outcomes**

- Student will be prepared to answer all knowledge questions and able to perform all required flight tasks to proficiency requirements of the FAA Private Pilot Airmen Certification Standards.

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**FT 201 - Pt 141 Instrument Rating Stage 1 Altitude Instrument Flying and Basic Instrument Navigation**

4 Credit(s)

Student will learn precise airplane attitude control solely by reference to flight instruments, including instrument flight theory for both the control and performance method of instrument flight and the primary/supporting method of instrument flight. Student will navigate using VOR, GPS, and NDB for intercepting and tracking courses.

**Prerequisite:** FT 143 or instructor consent

**Learning Outcomes**

- Student will be able to precisely control the aircraft solely by reference to the airplane instruments and have a basic understanding of instrument navigation using VOR, GPS, and NOB

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**FT 202 - Pt 141 Instrument Rating Stage 2 Holding and Instrument Approaches**

5 Credit(s)

Prerequisite: FT 201 Student will learn procedures for holding and application of attitude instrument flying to VOR, GPS, and /LS instrument approaches, including partial-panel approaches.

**Prerequisite:** Instructor consent

**Learning Outcomes**

- Student will be able to determine proper holding entry and apply holding procedures, and will be able to apply the control and performance method of instrument flight to fly VOR, GPS, and /LS instrument approaches.

---

**FT 203 - Pt 141 Instrument Rating Stage 3 Instrument Cross-country and Certification Prep**

3 Credit(s)

Prerequisite: FT 201 Student will learn instrument cross-country flight planning and practice all required FAA Instrument Rating tasks until they meet or exceed Airmen Certification Standards.

**Prerequisite:** Instructor consent

**Learning Outcomes**

- Student will be able to plan instrument cross-country flights and perform all tasks for FAA Instrument Rating Certification to Airmen Certification Standards

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**FT 221 - Pt 141 Commercial Pilot Stage 1 Ground and Airborne Lecture with solo lab**

3 Credit(s)

Student will transition to four-seat aircraft and perfect precision takeoff and landing skills, both dual and then solo, with flights to nearby local airports including night flights. Student will also fly solo cross-country navigation.

**Prerequisite:** Instructor consent

**Learning Outcomes**

- Student will be able to precisely control the aircraft during short and soft-field takeoffs and landings1 dual and solo, day and night, at local and nearby airfields. Solo-cross country navigation will be practiced

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**FT 222 - Pt 141 Commercial Pilot Stage 2 Ground and Airborne Lecture with solo lab**

3 Credit(s)

Student will transition to complex aircraft (retractable gear, controllable propeller, flaps), fly analysis missions to broaden knowledge of aerodynamics and aircraft performance, and accomplish long cross-country FAA solo flight requirement.

**Prerequisite:** FT 143

**Learning Outcomes**

- Student will be able to safely fly and receive FAA endorsement for complex aircraft. Performance analysis missions including cross-countries will be flown and data analyzed and graphed on comparison charts.
- Student will apply cross-country knowledge to accomplish FAA commercial long solo cross-country requirement

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**FT 223 - Pt 141 Commercial Pilot Stage 3 Ground and Airborne Lecture**

2 Credit(s)

Student will develop/maintain a high level of proficiency in attitude instrument flying.

**Prerequisite:** FT 143 or instructor consent

**Learning Outcomes**

- Student will develop and maintain proficiency in altitude instrument flight

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**FT 224 - Pt 141 Commercial Pilot Stage 4 Ground and Airborne Lecture**

4 Credit(s)

Emphasis on /FR Navigation using VOR, GPS, and /LS systems, as well as VOR and GPS holding procedures. Student will become proficient in the performance of instrument approaches to published minimums using the VOR, GPS, and /LS systems.

**Prerequisite:** FT 143 or instructor consent

**Learning Outcomes**

- Student will become proficient in instrument navigation, holding procedures, and instrument approach procedures using the VOR, GPS, and /LS systems

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**FT 225 - Pt 141 Commercial Pilot Stage 5 Ground and Airborne Lecture with Solo Lab**

5 Credit(s)

Course will complete all FAA commercial pilot training requirements including becoming proficient in commercial maneuvers, day and night cross-country navigation (VFR and /FR), and completion of solo night cross-country VFR.

**Prerequisite:** FT 221, FT 222, FT 223, FT 224 or instructor consent

**Learning Outcomes**

- Student will become proficient in commercial maneuvers and be able to fly day and night cross-country navigation, including dual IFR and solo night VFR cross-countries

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**FT 228 - Multiengine 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.

**Prerequisite:** Recommend possession of FAA private pilot license.

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**FT 230 - UAS Data Acquisition and Analysis**

3 Credit(s)

This course establishes an advanced understanding of the data link, radio communications, and autopilot associated with commercial UAS flight. Emphasis will be placed on enhancing mission safety and autonomous flight.

**Prerequisite:** FT 123 and FT 124B

**Corequisite:** GIS 151

**Learning Outcomes**

- The Student will be able to demonstrate the ability to operate safely with use of data links and radio communication

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**FT 231 - UAS Advanced Sensor**

4 Credit(s)

This course furthers a UA operator's knowledge in aerial photography and data collection. It emphasizes the use of advanced image technology for data collection and analysis. Students gain skills in basic photography, Crew resource management, aerial photography techniques, and data interpretation presentation.

**Learning Outcomes**

- The student will be able to demonstrate the ability to operate a sensor on a UAS for data analysis

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**FT 235 - UAS Capstone Project**

4 Credit(s)

This course is designed to have students compile and showcase their UAS work from their time at LCC. The course would also connect students with organizations in the community to allow them to showcase a real world project that would demonstrate their knowledge and skills.

**Prerequisite:** FT 124C, FT 124E, FT 230, FT 231

**Learning Outcomes**

Upon completion of this course, students will

- Have created a comprehensive portfolio of their work.



- Will have worked with a community organization to utilize their skills in UAS to help solve real world problems.

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### FT 239 - Part 141 Professional Pilot Flight Lab

1-7 Credit(s)

The Professional Pilot Course includes certification training for Private Pilot, Commercial Pilot, and Instrument Rating, in single-engine or multi-engine airplanes, and helicopter, when helicopter training becomes available. Emphasis throughout the Professional Pilot Course is placed on instrument piloting skills and the use of conventional and advanced navigation systems including GPS and digital/electronic display technology. This course is repeatable.

**Prerequisite:** Admission to the program requires completion of a Flight Technology Entrance Application, and obtaining a Student Pilot Certificate with an Airman's Medical (1st or 2nd Class).

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### FT 249 - Part 61 Pilot Flight Lab

1-7 Credit(s)

The Part 61 Pilot Flight Lab includes certification training for Private Pilot, Commercial Pilot and Instrument Rating in single-engine, or multi-engine airplanes and helicopters, when helicopter training becomes available. It may also be used for Flight Instructor, Instrument Flight Instructor, and Multi-engine Instructor certification. Emphasis throughout the Part 61 Pilot Course is placed on instrument piloting skills and the use of conventional and advanced navigation systems including GPS and digital/electronic display technology. This course is an alternative to FT 239 which is for Part 141 students, and is an option for those students who would prefer to train under Part 61. This course is repeatable.

**Prerequisite:** Admission to the program requires completion of a Flight Technology Entrance Application, and obtaining a Student Pilot Certificate with an Airman's Medical (1st or 2nd Class).

#### Learning Outcomes

Upon successful completion of this course students will have completed all minimum flight hours and attained flight skills proficiency required by the State of Oregon and the FAA. Part 61 requirements for certification (Private Instrument and Commercial) are essential for a pilot serving in the air transportation industry.

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### FT 250 - Private Pilot Ground School

5 Credit(s)

This course introduces and develops each knowledge and skill areas essential for successful completion of the FAA written examination for a Private Pilot Airplane and/or Helicopter. Topics include FARs, airplane structures, aerodynamics, meteorology, navigation, accessing and using performance data and numerous other industry information resources. May be offered online with instructor approval.

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### FT 251 - Commercial Pilot Ground School

4 Credit(s)

This course develops the knowledge and skills required for a candidate to successfully complete and pass the FAA written test required to be certificated as a commercial pilot.

**Prerequisite:** Recommend private pilot license or equivalent.

**Corequisite:** FT 261

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### FT 252 - Instrument Ground School

4 Credit(s)

This course prepares the student for successful completion of the FAA written examination required for an Instrument rating. The course develops an understanding of the IFR environment, systems and procedures. NOTE: FT 252 and FT 262 are co-requisites and must be taken concurrently.

**Prerequisite:** Recommend completion of FT 251

**Corequisite:** FT 262

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### FT 254 - 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.

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### FT 255 - Fundamentals of Instruction and Human Factors

3 Credit(s)

Psychological principles of 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 man/machine interface are covered. Studies CRM to improve crew coordination and situational awareness.

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### FT 256 - Flight Instructor-Airplane and Instrument Flight Instructor-Airplane Ground School

3 Credit(s)

Details of airplane flight operations and maneuver analysis, FAA regulations, and recommended procedures for CFIs. CFI-I prep includes a concise review of airspace, regulations, radio navigation, and meteorology specific to IFR flight. Prepares students for the FAA Flight Instructor-Airplane and Instrument Flight Instructor written exams.

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### FT 261 - Air Traffic Control and Airspace

1 Credit(s)

A review of Air Traffic Control (ATC) procedures and communications, radar and non-radar operations, navigational aids, and airspace classifications to include operational requirements for various airspace classifications. At completion of this course the student should be able to understand and apply critical elements of ATC within the National Airspace System.

**Corequisite:** FT 251

#### Learning Outcomes

Upon successful completion of this course, the student will have air traffic control and airspace knowledge to the extent required to pass the written exam required for FAA Commercial Pilot Certification.

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### FT 262 - Aviation Law and Regulations

1 Credit(s)

A review of regulations and enforcement actions primarily referencing 14 CFR but also including international (ICAO) regulations. Aircraft and pilot certification, rule-making legislation and implementation, and an analysis of aviation regulatory environments and processes will be reviewed, including legal decisions resulting from specific incidents. At completion of this course the student should be able to understand and apply pertinent regulations from 14 CFR to instrument and commercial flight operations.

**Corequisite:** FT 252

#### Learning Outcomes

Upon successful completion of this course, the student will be able to locate and interpret specific 14 CFR Federal Aviation Regulations (FARs) and apply these FARs to various situations arising in instrument and/or commercial aviation.

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### FT 271 - Part 61 Certified Flight Instructor/Instrument Instructor Ground Training

2 Credit(s)

The Federal Aviation Administration (FAA) Part 61 Certified Flight Instructor (CFI) and Certified Flight Instructor Instrument (CFII) Ground Training course provides FAA required ground training. Emphasis is placed on required FAA Fundamentals of Instruction (FOI), FAA endorsements, FAA regulations, flight planning, lesson plans, analysis of flight maneuvers, aircraft performance, unusual attitude recovery, instrument systems and instrument procedures.

**Prerequisite:** FT 223 and FT 225

**Prerequisite/Corequisite:** FT 255 and FT 256 (may be taken concurrently)

**Corequisite:** FT 272

#### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Implement FAA defined Aeronautical Decision Making (ADM) procedures.
- Provide FAA Part 61 and Part 141 ground instruction.
- Identify different learning styles, personality types, and barriers to learning.
- Apply theory to practice through instruction.
- Take an FAA Flight Instructor Airplane Oral Test.
- Take an FAA Flight Instructor Instrument Airplane Oral Test.

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### FT 272 - Part 61 Certified Flight Instructor/Instrument Instructor Flight Training

1 Credit(s)

The Federal Aviation Administration (FAA) Part 61 Certified Flight Instructor (CFI) and Certified Flight Instructor Instrument (CFII) Flight Training course provides FAA required flight training. Emphasis is placed on migration to the right seat, implementation of FAA Fundamentals of Instruction (FOI) while in flight, flight maneuvers, unusual attitude recovery, spin recovery, analysis of flight maneuvers, aircraft performance, instrument systems and instrument procedures.

**Prerequisite:** FT 223 and FT 225

**Prerequisite/Corequisite:** FT 255 and FT 256 (may be taken concurrently)

**Corequisite:** FT 271

## Learning Outcomes

Upon successful completion of this course, students will be able to:

- Implement FAA defined Aeronautical Decision Making (ADM) procedures.
- Provide safe flight instruction.
- Provide FAA Part 61 and Part 141 flight instruction.
- Identify different learning styles, personality types, and barriers to learning.
- Apply theory to practicality through instruction.
- Take an FAA Flight Instructor Airplane Practical Test.
- Take an FAA Flight Instructor Instrument Airplane Practical Test.

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## 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

Upon successful completion of this course, the student should be able to:

- Differentiate between formal and familiar social registers (Vous vs. tu)
- Identify and describe people, places and things.
- Express actions with -er, -ir, and -re verbs.
- Express disagreement using ne...pas.
- Get information by asking “yes/no” questions (Est-ce que) and interrogative expressions (Où, quand, comment, etc.)
- Refer to a specific place or person.
- Express sensations and feelings using the verb avoir.
- Express possession using the verb avoir and possessive adjectives.
- Indicate the absence of something (pas de...).
- Talk about plans, family and destinations.
- Express what one is doing or making with the verb faire.
- Speak about the near future using the verb construction “aller + infinitive”
- Talk about the weather
- Give the location of people and objects using prepositions of place (dans, entre, sur, sous, etc.)
- Gain and understanding of Francophone cultures of North America

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### 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

Upon successful completion of this course, the student should be able to:

- Talk about food and drink, express quantity and give commands.
- Give commands using the imperative
- Express preferences, tell time, point out people and things
- Express desire, ability, obligation and necessity.
- Express actions using the irregular -er, -ir and -re verbs
- Talk about things that happened recently using “venir + infinitive
- Express various forms of negation
- Express geographical locations (au sud, au nord, etc.)
- Express how long, how long ago, and since when
- Talk about past events.
- Talk about descriptions, habits and ongoing actions in the past
- Use pronouns to avoid repetition
- Express observations and beliefs using the verbs voir and croire.
- Gain an understanding of Francophone cultures of North and Sub-Saharan Africa.

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### 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

Upon successful completion of this course, the student should be able to:

- Give and follow directions using a map
- Describe past events using both the passé composé and the imparfait
- Avoid repetition by using object pronouns
- Express how things are done using adverbs
- Emphasize and clarify using stressed pronouns (eg. moi, toi, elle, etc.)
- Express every and reciprocal actions using pronominal verbs
- Use double object pronouns to speak succinctly
- Make comparisons using both adjectives and adverbs
- Talk about the future
- Link ideas using relative pronouns (que, qui, dont, etc.)
- Get specific information using interrogative pronouns (qui, lequel, etc.)
- Talk about quantity in detail using the conditional mode
- Gain an understanding of Francophone cultures of Europe and the Caribbean

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### 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:

- Acquire and use a vocabulary base in various topics of the course content.
- Communicate and exchange information effectively about him/herself with others
- Discuss points of view
- Improve pronunciation and listening skills
- Exercise improved cultural awareness

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### 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:

- Have an improved proficiency in the French language including listening, reading, writing, and speaking.
- Have an improved understanding of French history and culture, particularly of the Normandy region.
- Acquire a new perspective and deeper understanding of their own culture when encountering differences between it and the new culture

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### 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

Upon successful completion of this course, the student should be able to:

- Speak in the present tense using regular and irregular verbs
- Get information by asking “yes/no” questions (Est-ce que) and interrogative expressions (eg. Combien de, pourquoi, quand, comment, quel, lequel, etc.)
- Describe what people do for themselves and with others using reflexive and reciprocal verbs
- Describe people, places and things using descriptive adjectives

- Describe how and when things are done using adverbs
- Speak about and narrate in the past using the passé composé and the imparfait
- Gain a deeper understanding of Francophone cultures

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### 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

Upon successful completion of this course, the student should be able to:

- Speak about what someone had done or what had occurred before another past action, event or state.
- Express various forms of negation.
- Speak about part of something and to express the English concepts “some” and “any” by using the partitive article.
- Speak succinctly using the pronouns “y” and “en” to avoid repetition of a noun.
- Speak using more than one pronoun in the correct order in a sentence.
- Express an attitude, an opinion, personal will, or imply hypothesis or doubt using the subjunctive mood.
- Link ideas using relative pronouns (qui, que, où, auquel, etc.).
- Gain a deeper understanding of Francophone culture.

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### 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

Upon successful completion of this course, the student should be able to:

- Make comparisons using both adjectives and adverbs
- Speak about something that will or shall happen in the future
- Express doubt and uncertainty after certain expressions and conjunctions requiring use of the subjunctive mood (eg. bien que)
- Use an infinitive correctly in a sentence (eg. Nous comptons y aller.)
- Use the correct preposition when referring to geographical places
- Express a polite request, and indicate what would or could happen using the conditional mode
- Point something out or indicate a preference using demonstrative pronouns
- Use the present participle in multiple ways
- Express an action that would have occurred in the past and an action that will have occurred before another action in the future
- Use “if” clauses to express a condition or event upon which another event depends
- Gain a deeper understanding of Francophone culture

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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:

- Acquire and use a vocabulary base in various topics.
- Communicate and exchange information effectively about him/herself with others.
- Discuss points of view.
- Improve pronunciation and listening skills.
- Develop a deeper understanding of one’s own culture as well as learning about the cultures of others.

- 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:

- Students will have an improved proficiency in the French language including listening, reading, writing, and speaking.
- Students will have an improved understanding of French history and culture, particularly of the Normandy region.
- Students will acquire a new perspective and deeper understanding of their own culture when encountering differences between it and the new culture

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## 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.

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### 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, 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:

- 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.
- Work in a collaboration with others to measure and collect data related to earth science disciplines and astronomy, to analyze and graph the data.
- Practice discussing and formulating geologic concepts and processes that allow interpretations and conclusions based on their own observations.
- Analyze the interrelationships among geology, oceanography, meteorology, climatology, and astronomy and society, including the ethical use of science in society.
- Analyze the development of plate tectonic theory especially in light of the political situation at the time the theory was developing.
- Apply plate tectonic theory to specific situations and analyze the limitations of plate tectonic theory.
- Appraise past and current state of climate change theories and compare them with past and present climate change data.
- 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. Offered through distance learning.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- 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.



- Evaluate and question media reports about these subjects.
- 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.
- 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.

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### 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.

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### 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. Optional 4th credit requires labs exercises completed at home. Offered through distance learning. Lab included.

#### Learning Outcomes

Upon successful completion of this course, the student should 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

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### 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, selfrefuting 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.

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## Geographic Information Science

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### 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. This course may be offered online. 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.

#### Learning Outcomes

Upon successful completion of this course, the student will be able to:

- Discuss the holistic discipline of geography and the role of geographers in the workplace.
- Differentiate between tabular and geospatial data.
- Display spatial information on maps and other geographic representations.

- Use appropriate geographic tools and technologies.
- Discuss the characteristics and purposes of geographic representations such as maps, globes, graphs, and diagrams, aerial and other photographs, and satellite produced images.
- Analyze a variety of contemporary issues in terms of earth's physical and human systems.
- Discuss the how to use geographic knowledge, skills, and perspectives to analyze problems and make decisions.

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### 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. This course may be offered online. 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:

- 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.
- 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.
- 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
- 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.
- 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.
- 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
- Apply knowledge and skills to contemporary problems and issues: Students will: collect, edit, and analysis data to create visual and graphic information.

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### 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. This course may be offered online. 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:

- 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.
- 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.

- Understand the role of individuals and institutions within the context of society: Students will: understand the information and analysis on decision making.
- 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.
- 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.
- Understand the diversity of human experience and thought, individually and collectively. Students will: evaluate social data to summarize community demographics.
- 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

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## 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. This course may be offered online.

#### 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: Apply Geographic spatial analysis and scientific methods to understand the relationship between natural environment and human activity/response.
- 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.
- 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.
- 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.
- 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.
- Understand the diversity of human experience and thought, individually and collectively: Course addresses cultural response to scientific findings. Responses vary regionally, politically and economically.
- Apply knowledge and skills to contemporary problems and issues: Current natural hazard events are brought forward as examples on local to global scale.

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### 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. This course fulfills the race, gender, and ethnicity requirement. This course may be offered online.

### 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: Understand spatial geographic models, maps, diagrams to demonstrate concepts of culture region, cultural diffusion, globalization, cultural landscape and the various impacts of nature.
- 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.
- Understand the role of individuals and institutions within the context of society: Understand the importance of "place" to cultural identity of individuals and institutions.
- 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.
- 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.
- 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.
- 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.

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### 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:

- Summarize the impacts of migration.
- Describe the current areas of ethnic conflict and provide multiple perspectives for their causes.
- Describe the current patterns of economic inequality and understand their origins.
- Analyze how colonization impacts political stability and economic opportunity.
- Analyze the patterns of urban development.
- Design a UNICEF Aid package for a current UNICEF Global Project and address the possible positive and negative impact so such aid.

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## 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, the student should be able to:

- Describe and identify common rocks and rock-forming minerals, classifying them by using their physical properties.
- Contrast composition and texture of igneous, metamorphic and

sedimentary rocks.

- Compare how igneous, sedimentary, and metamorphic rocks form.
- Describe how the chemistry of magmas influences the types of rocks that will form and the eruptive style and types of volcanoes found in a region.
- Illustrate how seismic waves are used to interpret the composition and mechanics of layers within Earth's structure.
- Examine the topography, tectonics, seismicity, and volcanism associated with plate boundaries and intraplate settings.
- Interpret geological hazard maps.
- Identify geologic hazards at plate boundaries.
- Relate the nature of stresses to the type of deformation and identify types of folds and faults using maps and cross-sections.
- Classify types of mountains based on how they formed, and describe how accretion of terranes at convergent plate boundaries creates complex mountain belts over time.

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### 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

Upon successful completion of this course, the student should be able to:

- Sort, describe and identify common examples of each of the major rock types.
- Apply physical and chemical weather processes to case studies.
- Match common sedimentary rock types and sedimentary structures to the environments of deposition where they are found.
- Classify and describe mass-wasting events and processes by analyzing case-studies.
- Analyze streams as dynamic systems and recognize geomorphic features associated with streams.
- Explain the effects of climate and human impacts on groundwater systems, including aquifer depletion.
- Examine theories 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 melting.
- Apply the theory of plate tectonics to Earth's surface processes.
- Describe eolian processes, coastal dune systems, and desertification.
- Assess and examine problems related to mass wasting, flooding, groundwater pollution and depletion, global climate change, sea level transgression, and desertification; impacts of these problems on local people.
- Evaluate scientific data on natural climate variability over time, and projections for future climate change and effects on melting snowpack and glaciers and water supplies worldwide.
- Describe coastal erosion and deposition and geomorphology

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### 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:

- Use evidence from sedimentary rocks and structures to identify and interpret paleoenvironments of deposition.
- Use principles of age dating and various stratigraphic relationships to decipher geologic and tectonic events over time.
- Recognize methods of fossil preservation; describe, identify and classify notable fossil species from the Paleozoic, Mesozoic and Cenozoic.
- Interpret the sequence of geologic events and development of life as exposed in the rock and fossil records, using geologic maps and cross sections.
- Apply their understanding of various geologic theories, including plate tectonics and evolution.
- Describe major tectonic events that shaped North America over time.
- 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.



- 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.
- 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.
- Examine and discuss early evolutionary theories, and how they are being reconsidered/ revised in light of recent studies.
- Discuss and evaluate past global climate changes and apply that knowledge to recent climate change.
- Examine theories of, plate tectonics, mountain building, ancient climate change, evolution, uniformitarianism and catastrophism for comparison and assessment.
- 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:

- Critically examine the roles that rock and mineral resources play in making choices affecting sustainability of the environment.
- Test the properties of minerals, and to recognize common rock-forming and resource minerals.
- Describe the chemistry of minerals and recognize mineral groups and silicate subclasses and their interrelationships.
- Sketch space lattices, and sketch or demonstrate the symmetry and characteristics of the seven crystal systems.
- Explain the formation of minerals, gems, ore deposits, and specific types of igneous, sedimentary and metamorphic rocks.
- 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.
- Demonstrate proper sample collection techniques, labeling, documentation, and ethics.
- Report how rocks and minerals are used as resources and the relationships among rocks, minerals, gems and society.
- 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. Advise another geology class first. Lab included.

##### **Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Describe and explain the geologic origin of several national parks of the western United States.
- Classify park rocks, landforms, mountain-building episodes and plate tectonic settings.
- 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.
- Evaluate the effects of park tourism within the parks and consequences of mining and other resource extraction in neighboring areas.
- 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
- 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:

- Describe various geologic hazards and the science underlying them.
- Define a geologic hazard and be able to determine potential danger, damage and human impact the hazard causes.
- 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.
- Explain and evaluate efforts to mitigate geologic hazards.
- Analyze and explain hazards maps and determine which areas are susceptible to specific hazards and where people are at greatest risk from these hazards.
- 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.
- Critique and evaluate media reports concerning geologic hazards.
- 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, the student should be able to:

- Describe and classify minerals and rocks, and apply the rock cycle, mountain-building and plate tectonics theories to explain their origins.
- Model specific geologic situations using plate tectonic theory, an understanding of rock forming processes, volcanology, and seismology.
- Assess and examine theories of formation of various rocks, features, and mountain ranges in regions within and outside the United States.
- Work collaboratively when doing lab activities.
- Analyze seismic and volcanic data to identify plate boundaries and potential hazards associated with them such as deformation, seismicity, and volcanism.
- Evaluate the effects, including environmental, of earthquakes, volcanism, and mining on a region and its residents and critique the efficacy of mitigation attempts.
- Compare and contrast the influence of the chemistry of magmas on the types of rocks that will form, and the eruptive style and type of volcanoes.
- Construct and interpret geologic maps, including earthquake and volcanic hazard maps. 9. Identify and interpret geologic hazards at plate boundaries.
- Interpret structural deformation using maps and cross-sections to identify tectonic stresses affecting a given region over time.
- Create a geologic map from data collected in a classroom mockup of the geology of an area or in the field.
- Formulate hypotheses about how terrane accretion caused mountain ranges to assemble, by applying plate tectonic theory and based on geologic maps and other data from mountain ranges

#### **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:

- Describe, explain, and interpret the processes of physical and chemical weathering.
- 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

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### **G 203 - Evolution of the Earth**

4 Credit(s)

Geology 203 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

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## **Graphic Design**

### **GD 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. Coursework includes necessary competencies for graduation from the Graphic Design program.

#### **Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Define Graphic Design and describe major areas of the industry.
- Describe the major industries that utilize graphic design services.
- Present the basic history of graphic design and cite the field's major influences.
- Identify the key vocabulary associated with the field.
- Describe the skill, education and experience required for employment in the field as well as the pros and cons of the career.
- Discuss the typical progression of a graphic design assignment from concept to completion.
- Discuss the relationship between graphic design technology and the impact of recent technological changes on the field

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## **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. May be offered online.

#### **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

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### **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

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### **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. May be offered online.

#### **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.

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#### **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:

- Explain the physiological, psychological, and sociological factors that impact women's well-being.
- Identify experiences that those who identify as 'women' may have, including: pregnancy, childbirth, sexual assault, gender discrimination on their overall health outcomes.
- Identify common mental health issues among women.
- Explain the influence of family, community and the socially constructed environment on women's health behaviors and outcomes.
- Explain the interacting dimensions of environmental, physical, mental, emotional, social, intellectual and occupational health on women's health outcomes.
- Utilize independent critical thinking skills when analyzing evidence and non-evidence based gender specific health information.

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#### **HE 222 - Consumer Health**

3 Credit(s)

Helping students make healthy decisions while managing ever-changing health information. Hot topics include: health conditions & diseases, self-care, evaluating fitness choices, ads & quackery, alternative health, health insurance, death & dying, budgeting, consumer laws, & preventative health. May be offered online.

#### **Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- 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 certain special populations).
- Recognize the effectiveness of treatments available for various health conditions and diseases.
- Understand the process of self-diagnosis and self-care and when to consult a physician.
- Analyze health advertisements and information to determine accuracy of claims.
- Compare and contrast different sources of alternative health methods.
- Identify services and quality of care available at different health care facilities.
- Analyze various insurance plans.
- Understand the process of dying and funeral and burial options.
- Prepare an annual budget with health care costs such as products, services and insurance.
- Take action on a poor quality or misrepresented health product or service with reference to consumer laws and agencies.

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#### **HE 240 - Holistic Health**

3 Credit(s)

Examine beliefs, knowledge and traditional indigenous systems of healing throughout the world. Compare complementary, alternative, integrative and Eastern forms of medicine with conventional Western medicine. Explore nutritional, mind/body, environmental, spiritually focused and other health practices. This course explores the expanding field of holistic health therapies. Students will examine how holistic health therapies approach important public health issues, such as stress, poor nutrition, inactivity, and environmental degradation, with the goal of learning how to achieve a higher level of wellness. Students will gain a basic understanding of how complementary and alternative medicine (CAM) contrasts with conventional Western (allopathic) medicine, and how they can be used concurrently. This course will also address the validity of holistic approaches to help students make informed health care choices. A wide range of therapies, including integrative, nutritional, mind-body and naturopathic medicine, acupuncture and others will be explored. May be offered online.

#### **Learning Outcomes**

Students who successfully complete this course will be able to:

- Describe the philosophies and practices of several holistic health therapies and how they compare to conventional Western (allopathic) medicine.
- Identify specific situations when holistic therapies and conventional Western medicine can be complementary with one another.
- 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.
- Assess health-related values, beliefs, theories and complementary or integrative practices for the development of health behavior change strategies and personal plans.
- Critically examine research and media on alternative and allopathic medicine including historical, cultural and social contexts of use when making personal health decisions.
- Students will learn to recognize the sustainability of a particular health care product.
- Describe how the interacting dimensions of environmental, physical, mental, emotional, social, intellectual and occupational health and how they can affect global health outcomes.
- Utilize independent critical thinking skills when analyzing evidence and non-evidence based global health and sustainability information.
- 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.

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#### **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:

- Present current best practices and key theories in behavior change and health promotion.
- 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.
- Explain the influence of family, community and environment on health behaviors and outcomes.
- Outline strategies assessing self-awareness, behavior change, and modification of health risks.
- Describe the connection between ecological sustainability and positive personal health outcomes.
- Explain the interacting dimensions of environmental, physical, mental, emotional, social, intellectual and occupational health and how they can affect personal health outcomes.
- Utilize independent critical thinking skills when analyzing evidence and non-evidence based health education and promotion information.
- Challenge culturally constructed biases related to health beliefs, attitudes, behaviors, and outcomes

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#### **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:

- Understand the differences between Wilderness First Aid and First Aid in an urban environment.
- Assess a responsive and unresponsive person in a wilderness setting.
- Develop the ability to identify and care for breathing emergencies.
- Recognize the signals of a cardiac emergency and know how to care for someone who is having a cardiac emergency including CPR.
- Demonstrate how to care for soft tissue wounds and bleeding emergencies.
- Identify shock and take measures to control it.
- Identify and care for strains, sprains, dislocations, and fractures.
- Identify the signals of sudden illness including fainting, seizures, diabetic emergencies, stroke, poisoning, heat illness, cold emergencies and altitude sickness.
- Identify possible head and spinal injuries and demonstrate how to care for them in a wilderness environment.
- Evaluate an injured or ill person to determine if evacuation from the outdoor setting is needed.
- Improvise methods of transporting an injured or ill person to a safe environment.
- Respond to injuries caused by environmental hazards such as lightning

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### 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:

- 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).
- Demonstrate knowledge of the Emergency Action Steps and activation of the Emergency Medical Services system.
- Describe the legal guidelines and responsibilities of providing victim care and the lay responder's role within the EMS system.
- 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.
- Utilize independent critical thinking skills when analyzing evidence and non-evidence based research on emergency first aid response and other preventive health information.

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### HE 255 - Global Health and Sustainability

4 Credit(s)

Students will explore the interacting cause-and-effect relationships between political and economic power, privilege, social identity, industry, consumerism, violence, maternal and child health, hunger, homelessness, disease, ecosystems, biodiversity, and human health and sustainability outcomes.

#### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Challenge culturally constructed biases that allow discrimination to specific group identities that lead to stereotyping, micro-aggressions, implicit bias, systemic oppression and decreased individual and community health outcomes.
- Present research on how global economic, social and agricultural policies affect climate change, disease, pollution and degradation of biodiversity and ecosystems and human health.
- Describe how the United Nations Development goals are a plan of action to address the underlying health and sustainability issues globally.
- Communicate both orally and written about how positive actions, beliefs, community collaborations and increased self-awareness can lead to sustainable global health outcomes.
- Actively engage in activities with others that build personal and community climate resilience.
- Evaluate how empathy, emotional intelligence, ethical social interactions and altruism can lead to solutions that can better the health and sustainability outcomes for our world.
- Advocate for economic and social policies that advance global health and sustainability outcomes.
- Describe how the interacting dimensions of environmental, physical,

mental, emotional, social, intellectual and occupational health and how they can affect global health outcomes.

- Utilize independent critical thinking skills when analyzing evidence and non-evidence based global health and sustainability information.

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### HE 262 - First Aid 2: Beyond the Basics

3 Credit(s)

This course provides the knowledge and skills to earn American Heart Association's Basic Life Support (BLS) for Healthcare Providers certification. Patient assessment, breathing and cardiac emergencies, prevention of chronic disease and factors in emergency or trauma care are explored and practiced.

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### HE 275 - Lifetime Health and Fitness

3 Credit(s)

Explore current evidence-based fitness research and its relationship to achieving positive health outcomes. Develop and understanding of how optimal fitness including: cardiorespiratory, strength training, weight management and healthy diet contributes to the prevention of stress and chronic disease. May be offered online.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Describe how the foundations of physical activity relate to optimal health.
- Present safe and realistic guidelines in achieving and maintaining healthy weight and body composition.
- Recognize the relationship between optimal fitness and overall well-being.
- Explain how regular physical activity, good nutrition and healthy sleep habits decrease stress and prevent chronic diseases.
- Explain the interacting dimensions of environmental, physical, mental, emotional, social, intellectual and occupational health and how they can affect lifetime health and fitness outcomes.
- Utilize independent critical thinking skills when analyzing evidence and non-evidence based fitness lifestyle health information

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## Health Information Management

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### 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. Offered online.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- 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.)
- Describe data flows across health information systems and the implication of standards
- Identify root causes of EHR-PM data entry induced error (i.e. usability, workflow interference, system error, etc.) and suggest solutions
- 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)

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### HIM 111 - Implement and Customize Electronic Health Records

4 Credit(s)

Through this course the student will learn basic methods for assessing, selecting, and implementing an Electronic Health Record system that satisfies ONC/CMS meaningful use criteria in a health care setting. The student will define the underlying healthcare goals that drive meaningful use criteria and demonstrate the implementation of criteria for using and maintaining certified electronic health records (EHRs). Students will also work in a simulated EHR environment and develop skills at customizing an EHR to meet the information needs and practices of various users in clinical settings.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Describe the process of migration to an electronic health record (EHR) including organizational strategy, planning, analysis of EHR options, decision-making techniques, training, and implementation strategies.

- Understand the national strategy for adoption of EHRs throughout healthcare in the US, and meaningful use criteria.
- Discuss the importance and use of clinical decision support systems for clinical and administrative use.
- Define vendor requirements for an EHR system
- Demonstrate an understanding of implementation strategies and pitfalls.
- Recognize and describe different implementation issues for different health care settings
- Analyze the documentation in the health record to ensure it support the diagnosis & reflect the patient's progress, clinical findings, & discharge status
- Verify the documentation in the health record is timely, complete and accurate.
- Identify complete health record according to organizational policies, external regulations, & standards
- Apply policies/procedures to ensure accuracy of health data governance
- Identify & use secondary data sources
- Utilize software in the completion of HIM processes
- Utilize health information to support enterprise-wide decision support for strategic planning
- Explain analytics and decision support
- Analyze data to identify trends
- Explain common research methodologies and why they are used in healthcare
- Apply policies and procedures to ensure the accuracy and integrity of health data both internal and external to the health care system

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### 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

- Understand the purpose of code sets and their relationship to processing medical insurance claims and obtaining reimbursement.
- Understand coding principles and guidelines.
- Interpret basic coding rules and apply them when choosing a code for diagnosis and treatment.
- Accurately assign diagnosis and CPT codes to the highest level of specificity with a 70% accuracy, or higher.
- Accurately assign evaluation and management, outpatient surgical procedure, laboratory, radiology and medicine coding with a 70 % accuracy, or higher.

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### 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. Offered online.

#### Learning Outcomes

Upon successful completion of this course, the student will:

- Summarize the purposes served by the medical record
- Develop an understanding of the role of the Health Information Management department in a health care facility.
- Describe the skills, knowledge, and abilities of health information professional
- Differentiate the content of forms in the paper and electronic medical record
- Evaluate the trend toward computer-based patient records and its effect on the HIM professional
- Examine storage and retrieval of patient data records

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### 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:

- Define the basic terminology of the disease process
- Explain the concepts of inflammation, immunity, allergy and neoplasia
- Describe the most commonly occurring diseases of our society and of each body system
- Describe the mechanisms of hereditary disease, environmental factors involved in disease and diseases caused by deficiencies or excesses of nutrition
- Understand key diseases of each system of the human body
- Discuss the general effects of stress and aging on the human body
- Be successful in researching a current topic regarding a specific disease and its disease process
- Understand how to and be successful in participating in a group project (via WKI) concerning a specific disease and its disease process.

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### HIM 160 - Healthcare Insurance and Billing

4 Credit(s)

This is a hands-on 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. This course is offered online.

**Prerequisite:** MTH 052 or higher with a grade of Pass/C- or better, and HP 105 and HP 110 and (CIS 101 or CS 120) with a grade of C or better.

#### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Identify a new versus established patient, obtain patient demographic information, insurance verification, and authorizations and collect time-of-service payments
- Understand and explain the importance of accurate documentation when working with electronic health records
- Describe the different types of medical insurance, their characteristics and eligibility requirements
- Determine Coordination of Benefits for patients with more than one insurance plan
- Code diagnoses using the basic steps and principles of the ICD-10-CM coding system
- Code procedures/services using the basic steps and principles of the CPT/ HCPCS coding system
- 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
- Understand and complete the hospital billing cycle following the guidelines previously learned
- Discuss HIPAA/HITECH, legal, and ethical considerations with emphasis on confidentiality, protected health information and fraud related to insurance
- Discuss the processing of payers' remittance advices (RAs) and patient billing/collections

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### 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. Offered online.

#### Learning Outcomes

Upon successful completion of this course, the student will:

- Identify the major types of information system applications used in healthcare organizations, such as coding, administrative, voice-recognition, decision support, human relations, EHR, PHR
- Recognize emerging trends affecting the development of healthcare

information systems

- Identify policies which need to be developed and adopted to ensure security of health records
- Identify the types of information needed by different healthcare decision makers
- Identify the greatest threats to the security of health information
- Discuss the current status of the electronic health record development and implementation

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### 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. Offered online.

**Prerequisite:** MTH 052 or higher, or test into MTH 060 or higher

#### Learning Outcomes

Upon successful completion of this course the student will:

- Define statistics, define where statistics in healthcare originates, and identify the users of healthcare statistics
- Explain basic statistical mathematic functions: fractions, decimals, quotients, proportion, rate, and percentage
- Perform basic mathematical functions accurately
- Define, differentiate, and apply the terms related to hospital censuses, service days, and admission and discharge
- Define and compute: hospital and department census, inpatient service days, and admission and discharge
- 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
- Compute the bed occupancy percentage by date and by service days
- Calculate the direct and indirect bed turnover rate
- Define and calculate: length of stay variables
- Define and calculate death rates for various populations
- Define and calculate operations and procedures
- Define and calculate cancer mortality
- Define and calculate hospital autopsies and their rates
- Define and calculate various morbidity rates
- Describe the uses of statistics computed within the HIM department regarding unit cost, productivity, and staffing levels
- Differentiate between operational and capital budgets
- Generate and verify computerized statistical reports for accuracy
- Define categorical data: nominal, ordinal, interval, and ratio
- Differentiate between discrete data and continuous data
- Describe and differentiate between various tools used for presenting data
- Create tables and graphs to display statistical information
- Define the basics of healthcare research
- Describe various types of research designs
- Understand the privacy considerations in clinical and biomedical research
- Understand and describe data interpretation issues

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### 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 120, HIM 183, HIM 200, HP 220, HIM 230 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:

- Describe the impact of theories of management on health information functions
- Examine the various theories of management demonstrated within healthcare organizations
- Distinguish between the various theories of leadership exhibited within

healthcare organizations

- Explain the management functions of planning, organizing, leading, and controlling in relation to a health information management (HIM) manager's job responsibilities
- Identify the levels of management most exhibited in healthcare organizations
- Discuss the use of dashboards and scorecards as controlling tools for managers
- Discuss ethical concerns in regard to HIM management
- Examine how cultural diversity impacts the health information management (HIM) workforce
- Identify the roles and responsibilities of team membership
- Explain how workplace morale contributes to the sustainability of the HIM department
- Assess the impact of changing workforce demographics on the HIM profession
- Explain fiscal responsibilities in relation to budgeting
- Compute a budget variance
- Explain the purpose of a budget committee
- Create a budget using an Excel spreadsheet
- Define organizational development in terms of strategic planning
- Explain the techniques used to promote change Identify the stages associated with the adoption of innovation or change
- Contrast the impact of differing conflict management styles required for managing resistance and conflict associated within change
- Discuss federal equal employment opportunity legislation
- Discuss key components of the Americans with Disabilities Act
- Evaluate legal practices in relation to interviewing and hiring practices
- Explain the key components of dismissal for cause and due process
- Explain job analysis
- Differentiate between health information management (HIM) job analyses, job descriptions, and job specifications
- Adapt health information management policies and procedures to support job tasks outlined in job descriptions
- Evaluate the role of human resources in the recruitment of health information management (HIM) professionals
- Discuss employee selection in relation to job hiring
- Describe the role performance appraisals play in the oversight of health information management (HIM) functions
- Conduct effective performance appraisal interviews
- Explain the benefits and components of a new employee orientation program
- Compare current methods in training and development that apply to health information management (HIM)
- Justify additional training needs based on emerging roles in HIM
- Develop training opportunities for consumer engagement activities
- Evaluate health information management's (HIM's) organizational model based on influence and structure
- Discuss how to leverage HIM's role within the healthcare community
- Examine the American Health Information Management Association's (AHIMA's) professional competencies to maintain relevancy as an HIM professional

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### 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

- Differentiate common national models of healthcare delivery and payment systems and appreciate the influence of the federal government in the US healthcare sector
- Differentiate the different code sets approved by HIPAA of 1996
- Discuss and differentiate major type's health care insurance plans: Voluntary, Employer based, and Government sponsored (Medicare and Medicaid)



- Define managed care, including delineate characteristics of

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### 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. Offered online.

#### Learning Outcomes

Upon completion of this course, students will be able to:

- Define a performance improvement model
- Identify improvement opportunities based on performance measurement
- Use teamwork in performance improvement
- Aggregate and analyze performance improvement data
- Communicate performance improvement activities and recommendations
- Measure customer satisfaction
- Identify the continuum of care
- Implement the provision of care, treatment, and services to prevent and control infectious disease 8. Describe ways to decrease risk exposure
- Identify the components of a safe medication management system
- Apply tools to manage the environment of care developing staff and human resources
- Organize resources for performance improvement
- Research and navigate the accreditation, certification, or licensure process
- Identify aspects of change management and the human side of change
- Explain common research methodologies and why they are used in healthcare
- Summarize project management methodologies
- Explain common research methodologies and why they are used in healthcare
- Apply information and data strategies in support of information governance initiatives
- Utilize enterprise assets in support of organizational strategies
- Use teamwork in performance improvement

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### 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. Offered online.

**Prerequisite:** HIM 114 and HIM 120 and HIM 183 and HP 220 and HIM 222 with grade of C or better, or instructor consent

#### Learning Outcomes

Upon successful completion of this course, the student will:

- Summarize the development of the health information management profession from its beginnings to the present.
- Evaluate contrast the paper-based, hybrid, and electronic methods in fulfilling the functions of the health record.
- Describe the attributes of security, access, flexibility, connectivity and efficiency in fulfilling the functions of the health records.
- Perform qualitative and quantitative analysis of records in various healthcare records, i.e. acute care and ambulatory records.
- Define how various primary and secondary data sets are used in healthcare settings.
- Describe the purpose, use, and documentation, requirements for customary reports, observations, orders, notes, authorizations, and consents included in a health record.
- Identify types of numbering, filing, indexing and registry sets are used in health care settings.
- Explain the purpose and elements of a personal health record.
- Explore emerging activities at the federal, state, and regional level towards a national electronic health record.
- Describe the purposes of registries and indexes, such as the master patient Index, disease index, and operational index.
- Identify the role of the health information management professional in data stewardship of primary and secondary data.

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### 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. Offered online.

**Prerequisite:** HIM 241 with a grade of C or higher, or instructor consent.

#### Learning Outcomes

Upon successful completion of this course, the student will:

- Demonstrate a clear understand the history and use of clinical vocabularies
- Demonstrate an understanding of, and be able to distinguish among the various reimbursement methodologies.
- Explore and discuss the fundamentals of work planning and Staffing.
- Explore the organization principles and organizational tools
- Understand the structure and importance of Regional Health Information Exchanges, Personal Health Records (PHR)
- Describe medical identity theft and theft prevention methods

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### 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. This course offered online.

**Prerequisite:** HIM 107 and HIM 120 and HIM 200 and HP 220 and HIM 230 and 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:

- Identify a new versus established patient, obtain patient demographic information, insurance verification, and authorizations and collect time-of-service payments
- Understand and explain the importance of accurate documentation when working with electronic health records
- Describe the different types of medical insurance, their characteristics and eligibility requirements
- Determine Coordination of Benefits for patients with more than one insurance plan
- Code diagnoses using the basic steps and principles of the ICD-10-CM coding system
- Code procedures/services using the basic steps and principles of the CPT/HCPCS coding system
- 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
- Understand and complete the hospital billing cycle following the guidelines previously learned
- Discuss HIPAA/HITECH, legal, and ethical considerations with emphasis on confidentiality, protected health information and fraud related to insurance
- Discuss the processing of payers' remittance advices (RAs) and patient billing/collections

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### 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. This is an online course.

**Prerequisite:** HIM 114 with a grade of C or better.

#### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Summarize the characteristics of the ICD-10-CM classification system
- Describe the format of the Tabular List of Diseases and Injuries
- Identify and define the chapters and subchapters or blocks used in ICD-10-CM
- Express what the main terms, subter ms, carryover lines, nonessential modifiers, and eponyms are that are used in ICD-10-CM
- Recognize the contents of the Appendices of ICD-10-CM
- Explain the format of the Alphabetic Index to Diseases in ICD-10-CM

- Demonstrate an understanding of the use of the cross-reference terms and instructional notes used in ICD-10-CM
- Describe the rules for multiple coding
- Explain how connecting words are used in the Alphabetic Index
- Apply the symbols, punctuations, and abbreviations used to code in ICD-10-CM
- List the basic steps in ICD-10-CM coding
- Assign diagnosis codes using the Alphabetic Index and Tabular List

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### 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. This is an online course.

**Prerequisite:** HIM 114 for a grade of C or better

#### Learning Outcomes

- Describe the background and rationale for the development of ICD-10-PCS.
- List the seven characters that compose an ICD-10-PCS code.
- Identify the 17 sections of ICD-10-PCS and distinguish between the Medical and Surgical, Medical and Surgical Related, and Ancillary Sections.
- Describe the body system and body part characters and how the two character values relate to each other.
- Define the meaning of the root operation and the nine subgroupings of the root operations in the Medical and Surgical section.
- List and define the seven different approach values used in ICD-10-PCS.
- Describe the device character and the criteria for including a value for devices.
- Discuss the use of the Device Key, Device Aggregation Table, and Substance Key found in the ICD-10-PCS system.
- Discuss the use of the qualifier as the last character in the ICD-10-PCS code.
- List the steps in code building in ICD-10-PCS, both in using a coding book and the CMS file method.
- Build ICD-10-PCS codes for given procedures using a coding book and the CMS file method.

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### 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 (CPT) codes and HCPCS codes per guidelines and will utilize encoder programs. This is an online course.

**Prerequisite:** (HP 100 and HP 150 and HP 152) or (BI 231 and BI 233) with a grade of C or better

#### Learning Outcomes

- Identify organizations that address the content of the physician office health record
- Understand the definitions pertaining to evaluation and management (E/M) services
- Apply knowledge of E/M services guidelines to locate the correct code for the level of service provided during the encounter or visit
- Describe the contents and structure of all sections of the CPT code book
- Identify the modifiers that are most commonly used for CPT coding
- Differentiate between modifiers for physician use and modifiers for hospital outpatient use
- Append modifiers appropriately
- Interpret health record documentation to identify codable diagnostic and procedure statements resulting from a physician service
- Define what HCPCS codes are, including their format and publishing body
- Demonstrate how to assign HCPCS codes while observing the coding hierarchy
- Identify ways to obtain regulatory agency and payer-specific guidelines for use in the coding and reimbursement process
- Describe the process flow of claims generation and processing from patient visit to final payment
- Recognize potential coding quality issues as reported on payer remittance reports (for example, explanation of benefits)
- Identify ways to obtain or create tools to clarify conflicting, ambiguous, or missing health record documentation and/or billing information from the

- physician
- Explain the concept of compliance

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### 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. Offered online.

**Prerequisite:** HIM 273

#### Learning Outcomes

Upon successful completion of this course, the student will:

- Appropriately Interpret information contained in the Current Procedural Terminology (CPT) and Health Care Procedural Codes (HCPCS) guidelines with application to Ambulatory Payment Classifications (APCs).
- Apply appropriate modifiers to CPT/HCPCS codes.
- Analyze surgical, laboratory, therapeutic and other hospital source documents to determine services that can be coded.
- Define terminology, describe components, and assign codes to integumentary and musculoskeletal systems.
- Define terminology, describe components, and assign codes to respiratory and cardiovascular systems.
- Define terminology, describe components, and assign codes to digestive system.
- Define terminology, describe components, and assign codes to urinary/male reproductive system.
- Define terminology, describe components, and assign codes to female reproductive system.

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## 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, the student should be able to:

- Given a medical term, spell, pronounce, define, identify word parts, and correctly use the term or complete a statement.
- Given a definition, construct an acceptable and correctly spelled medical term.
- Given a list of phrases, names, or labels, provide a medically acceptable abbreviation.
- Given an incomplete statement, supply the correct medical term to properly complete the statement.
- Given a singular form of a medical term, correctly provide the plural form.
- Given a plural form of a medical term, correctly provide the singular form.
- Given word parts and definitions, construct correctly spelled medical terms.
- Given a medical abbreviation, provide the correct phrase, name, or label.
- Given an oral exam of sentences which include medical terms, correctly pronounce each term and explain the meaning of the sentence

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### HP 101 - Introduction to Health Care and Public Health

4 Credit(s)

This course surveys health care and public health organization and the delivery of health services in the U.S. Included in the survey are relevant organizations and their interrelationships, professional roles, legal and regulatory issues, payment systems, public health policies and the importance of health reform initiatives. Offered online.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Describe qualities essential to effective functioning as a health care worker.
- List the educational and licensing requirements for at least six health careers.
- Describe approvals that ensure the competency of health care workers.
- Apply the problem solving process to a sample decision.

- Describe major changes and trends in health care that has changed the way care is delivered.
- Describe major problems of health care delivery and several ways in which government and private sector have attempted to manage health care delivery.
- Describe a variety of levels of care that are available to consumers today, including complimentary care.
- Explain the concept of “wellness”.
- Describe aspects of legal and ethical accountability in the health care professions.
- Understand and explain the importance of infection control practices and maintaining safety of the health care worker, patients and others.
- Understand and explain the importance of a healthy lifestyle.
- Describe the characteristics and behaviors of workers who display professionalism.
- Explain the value of the individual and how it applies to health care.
- Describe ways that the health care worker can determine the individual needs of patients that take into account cultural influences.
- Explain the importance of effective communication in health care delivery and how to apply communication techniques in the workplace.
- Describe how methods or paying medical costs have changed over the years and how health care workers can help control costs.
- Identify strategies for successful employment

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### 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. Offered online.

#### Learning Outcomes

Upon successful completion of this course the student will:

- Demonstrate proficiency creating patient medical records with accurate demographic and financial information.
- Demonstrate the process that will avoid duplication of medical records.
- Demonstrate proficiency in posting charges, entering medical codes; prepare billing statements, post payments from payers and insurers, post overpayments, and process refunds.
- Demonstrate proficiency in clinical documentation in the patient EHR
- Demonstrate accurate administrative documentation in the patient record.
- 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.
- Demonstrate understanding of issues of confidentiality in relation to the medical record.
- Demonstrate proficiency of evaluating a medical record for completeness in regards to regulatory requirement and medical necessity.
- Demonstrate proficiency in completing insurance claim forms
- Demonstrate proficiency in obtaining preauthorization, including documentation.
- Demonstrate proficiency of verifying eligibility for managed care services and complete appropriate documentation in EHR.
- 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.
- Demonstrate proficiency in accessing and printing appropriate patient education documents

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### HP 110 - Health Office Procedures

3 Credit(s)

Principles of filing and records management specifically for the medical facility - Legal and ethical concerns of confidentiality & privacy - Fundamentals of client reception, appointment scheduling, telephone techniques, and letter composition.

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### HP 150 - Human Body Systems 1

3 Credit(s)

Prerequisite: HO 100 or HP 100 This course introduces the fundamental concepts of the anatomy and physiology of the cell and skin, musculoskeletal, nervous, sensory, endocrine, and circulatory-lymphatic systems. May be

offered online. Part 1 of a 2 part series.

**Prerequisite:** HP 100

#### Learning Outcomes

Upon successful completion of this course the student should be able to:

- Describe anatomy and physiology
- Define homeostasis and the negative-feedback system and explain why they are important
- Describe directional terms and the three major planes of the human body
- Define element and atom and the subatomic particles of an atom
- Describe the structure of a cell membrane
- List four ways by which substances cross the cell membrane
- Describe the functions of the integumentary system
- Identify at least 25 bones of the human body
- Describe the functions of the muscular system and identify at least 25 muscles of the human body
- List the divisions of the nervous system and describe the characteristics of each
- Describe the anatomy and physiology of the eye
- Describe the anatomy and physiology of the ear
- Describe the functions of the endocrine system
- Describe the different substances in blood and their functions
- Describe the structure and function of the heart
- Describe the structure and function of veins, arteries and capillaries

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### HP 152 - Human Body Systems 2

3 Credit(s)

This course introduces the fundamental concepts of the anatomy and physiology of the respiratory, digestive, urinary, and reproductive systems. A basic introduction to microbiomes is included. May be offered online.

**Prerequisite:** HP 100

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Correctly describe the functions of the lymphatic system.
- Correctly describe the structure & function of tonsils, lymph nodes, the spleen and thymus.
- Correctly describe the anatomy & physiology of the respiratory passages, beginning at the nose & ending at the alveoli.
- Correctly list the pulmonary volumes & capacities & define each of these terms & concepts.
- Correctly list the organs that comprise the digestive tract & understand their basic functions.
- Correctly list the accessory organs of the digestive tract & understand their basic functions.
- Correctly list specific enzymes & hormones produced by the accessory organs, the stomach, & the other organs of the gastrointestinal tract.
- Correctly describe the dietary sources of carbohydrates, proteins & fats, their uses in the body, & the daily recommended amounts in the diet.
- Correctly list common vitamins & minerals & give a function for each.
- Correctly list the structures that make up the urinary system & describe the overall functions this system performs.
- Correctly describe the anatomy, physiology, & hormones associated with the female reproductive system.
- Correctly describe the anatomy, physiology, & hormones associated with the male reproductive system. 1
- Correctly describe the process of fertilization & stages of growth of the human organism from embryo & fetus through childhood & adulthood.
- Understand the basics of microbiology as presented in the course packet.
- Understand the basics of immunology as presented in the course packet & chapter 14 of our course textbook

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### 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. Offered online.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:



- State the main medical uses for drugs.
- List the main sources for drugs, giving examples from each source.
- Explain the significance of the Controlled Substances Act of 1970.
- List the controlled substance schedules and cite examples of drugs listed in each.
- Identify available drug references including the Physician's Desk Reference (PDR), and be able to use them effectively.
- Classify drugs according to preparation and therapeutic action.
- Utilize accepted drug abbreviations and systems of measurements.
- Describe and demonstrate universal and standard precautions.
- Explain how to prevent needle stick injuries in health care settings.
- State the actions, uses, contraindications, adverse reactions, dosages, and routes for various classes of drugs.
- List the safety issues that apply when administering medications.
- Identify US consumer safety precautions and drug relations.
- Define key terms.

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### 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. May be offered online.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Discuss historical perspectives of health care
- Explain sources of law that effect health care –including licensing, regulation and accreditation
- Analyze Tort Law/theories of negligence and tort reform
- Describe criminal aspects of health care law
- Examine contract and antitrust issues – including managed health care
- Critique medical staff organizations
- Discuss medicine and the law
- Analyze corporate liability and liability by departments and health care professionals and malpractice insurance
- Discuss information management and health care records
- List patient rights and responsibilities /patient safety and zero tolerance
- Recognize the importance of legal reporting requirements
- Analyze health care ethics
- Synthesize policy relating to employment law and labor relations in the health care industry

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## History

### HST 101 - History of Western Civilization

4 Credit(s)

A survey of the historical development of the early Western world, peoples, and societies that have influenced it including the Greeks, the Jewish, the Romans, and Christians, the Germanic and Islamic influences in the wake of the fall of Rome, and the early Renaissance. This course will provide an overview of diverse peoples and nationalities, the creation of and changes in religious systems, ideas, social structures, and political institutions while considering connections to our modern world. May be taken out of sequence. May be offered online.

#### 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 and consider important concepts, movements, and themes to understand peoples of ancient and medieval societies from 5000 BCE to late Medieval/early Renaissance.
- 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.
- 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.

- 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.
- 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.
- 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.

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### HST 102 - History of Western Civilization

4 Credit(s)

A survey of the historical development of the Western world over a period of several hundred years including the Italian Renaissance, expansion to and colonization of the western hemisphere, the Reformation era, the Enlightenment and Scientific Revolution, early Industrial Revolution, finishing with the French Revolution. This course will provide an overview of diverse peoples, nationalities, creation of, and changes in religious/value systems, scientific theories, social structures, economies, and political thought and institutions. Main themes of Western societies will be synthesized and considered in light of our modern world. May be taken out of sequence.

#### 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 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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 103 - History of Western Civilization

4 Credit(s)

A survey of the historical development of the Western world from approximately 1800 to the late twentieth century, including industrialization and labor, social movements, mid 19th-century political revolutions, imperialism, ideologies and politics of the 19th and 20th-century, the world wars and decolonization,

Cold War, and popular culture. This course will provide an overview of diverse peoples, nationalities, and cultures while putting them in the context of changing social, political, economic conditions and values. These concepts, events, and people will guide our understanding of the present world. May be taken out of sequence. May be offered online.

#### 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 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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 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. May be offered online.

#### 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 and consider important concepts, movements, and themes to understand peoples of ancient and medieval societies from 5000 BCE to late Medieval times.
- 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.
- 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.

- 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.
- 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.
- 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.
- 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 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. May be offered online.

#### 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 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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 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. May be offered online.

## 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 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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 195 - History of the Vietnam War

4 Credit(s)

This course examines the Twentieth-century conflict in South East Asia, and is designed to help students grasp the political, social, and economic realities of the Vietnam War, as it progressed in both South East Asia and the United States. This course includes rare documentary film footage and archival photographic material of soldiers and civilians, as well as those political figures that were central to the development and outcome of this struggle. History 195 is designed to shed light on the reasons for U.S. involvement and the factors behind the failure of military and political policies. Offered as an online class only.

## 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 and consider the political, military, social, and economic realities which shaped the lives of those involved in the Vietnam War, as it progressed in both South East Asia and the United States.
- Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live. Analyze how diverse groups and ideology affected the outcome of this war. Focus on human interactions and shed light on the reasons for Western involvement and the factors behind the failure of both European and American military and political policies
- Understand the role of individuals and institutions within the context of society. Course will examine the influential power exerted on the development and outcome of this struggle by individuals, differing philosophies of nationalism and history, and both socio-cultural and political-economic institutions. This will include biographical history as well as national and international historical developments, where appropriate.
- 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, especially as it pertains to the evaluation and re-evaluation of this controversial war. Develop the ability to critically analyze

the information presented throughout the course, including their sources, citations, and philosophical points of view.

- 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.
- 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 Vietnam War. This includes accounts from multiple sides of the conflict, including newly available sources from the previously unavailable communist point of view.
- Apply knowledge and skills to contemporary problems and issues. Identify causation, correlations, analogies, and potential lessons between the historical past, 1954-1975 in particular, and contemporary times. Consider issues common to all eras and the 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. May be offered online.

## 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. 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.
- 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.
- 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 formation of social groups.
- 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.
- 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.
- Understand the diversity of human experience and thought, individually and collectively Learn about individuals and social groups focusing on class, race, ethnicity, and gender.
- 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. May be offered online.

## 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 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.
- Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live.
- 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.

- Understand the role of individuals and institutions within the context of society. 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.
- 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.
- 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
- 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.
- 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

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### 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. May be offered online.

#### 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 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
- Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live.
- 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.
- 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.
- 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.
- 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
- 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.

- 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.

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### HST 208 - US History Since 1945

4 Credit(s)

A survey of American history and culture since the Second World War. Some of the issues and people looked at are: the use of atomic weapons; the Marshall Plan; the Korean War; African-Americans' struggle for civil rights; Vietnam; post-War immigration; multiculturalism; the Cold War; the changing role of women in American society; and the politics and Presidents of the era.

#### 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. Develop a broad understanding of the impact of WWII on people in the United States as well as people in Western and Eastern Europe.
- 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 democracy in the United States.
- Understand the role of individuals and institutions within the context of society. Students will develop an understanding of labor and unionism, the origins of the Cold War and foreign policy, the Red Scare and McCarthyism, the Civil Rights Movement, women's rights movement, etc. Learn about presidents and the people who elect them.
- 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.
- 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.
- Understand the diversity of human experience and thought, individually and collectively Learn about individuals and social groups focusing on class, race, ethnicity, and gender
- Learn the importance of place and environment on people.
- 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 209 - American History: The Civil War

4 Credit(s)

The Civil War course is based in part on the award-winning documentary film series of the same name. Its subject matter is the history of the U.S. Civil War and it is designed to help students grasp the political, social, and economic realities of the conflict as it progressed in both the North and South, the problems of the Northern and Southern governments during the war, the major military campaigns of the war, and the impact of the war upon the civilian population. Offered as an online class only.

#### 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 and consider the political, military, social, and economic realities which shaped the lives of those involved in the American Civil War, both in the years immediately preceding the outbreak of war, as well as the issues that arose in its immediate aftermath.
- Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live. Analyze how diverse groups and ideology affected the outcome of this war. Focus on human interactions and shed light on the reasons for its outbreak, Constitutional principles at stake, and the factors behind the failure of Confederacy and the victory of the Union, including both military and political policies.
- Understand the role of individuals and institutions within the context of society. Course will examine the influential power exerted on the development and outcome of this struggle by individuals, differing philosophies of nationalism and sectionalism, and both socio-cultural and political-economic institutions. This will include biographical history as well as national historical developments, where appropriate.
- 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, especially as it pertains to the evaluation and re-evaluation of this controversial war. Develop the ability to critically analyze the information presented throughout the course, including their sources, citations, and philosophical points of view.

- 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.
- 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 American Civil War. This includes accounts from multiple sides of the conflict, both North and South, including newly available sources from recent scholarship.
- Apply knowledge and skills to contemporary problems and issues. Identify causation, correlations, analogies, and potential lessons between the historical past, 1860-1865 in particular, and contemporary times. Consider issues common to all eras and the human experience.

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### 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:

- 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.
- 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.
- 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.
- 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.
- 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.
- Understand the diversity of human experience and thought, individually and collectively. Learn about individuals and social groups focusing on class, race, ethnicity, and gender
- 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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## Honors

Note: Students cannot receive credit for both the Honors and non-Honors versions of a course.

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### ANTH 102\_H - World Archaeology-Honors

4 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 [lanecc.edu/honors](http://lanecc.edu/honors) for information. 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. May be offered

online. Students cannot receive credit for both ANTH 102\_H and ANTH 102.

#### 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: Analyze the transition of human societies worldwide from a predominately hunting and gathering way of life to a settled farming, and ultimately urban, way of life.
- Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live: Trace and discuss the cultural processes involved in adaptations to diverse environmental circumstances and major migrations of people around the world. Explore and discuss the rise of cultural complexity in ancient societies such as those in Mesopotamia, Indus valley, Egypt, China, Africa, South America and North America.
- Understand the role of individuals and institutions within the context of society: Explore the concept of the household as it relates to highly mobile hunter gatherers, settled farming communities, and urban societies of the past. Discuss evidence for the role of individuals and institutions in these diverse cultural groups through time and across space.
- Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry: Identify and analyze various hypotheses concerning the causes related to major cultural shifts overtime and across space. Explore and utilize the thought processes basic to the scientific method as applied to archaeological research. Provide a historical overview of the emerging theoretical frameworks employed in archaeological research over the last century.
- Utilize appropriate information literacy skills in written and oral communication: Students will have opportunities to write essays and give oral presentations in class that synthesize and analyze lecture and reading materials. They will also be encouraged to research special topics in archaeology and/or visit local museums and provide written or oral summaries of their findings.
- Understand the diversity of human experience and thought, individually and collectively: This course, by nature, focuses on the diversity of human experience through the analysis of cultural lifeways represented in the archaeological record.
- Apply knowledge and skills to contemporary problems and issues: Analyze and discuss reasons for the rise and fall of ancient civilizations. Relate this discussion to issues and trends observed in the contemporary world. Explore where and how human experience of the past is linked to the present.

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### ART 115\_H - Basic Design: Fundamentals-Honors

3 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. WR 121-readiness (score of at least 96 on the sentence-skills placement test) recommended. See [lanecc.edu/honors](http://lanecc.edu/honors) for information. Beginning course in two-dimensional design for art and non-art majors. Emphasis on fundamental visual elements, concepts and theory basic to drawing, painting, graphic design and other media. Strongly recommended for first year art majors, taken prior to ART116 and concurrently with ART111 and ART131. Students cannot receive credit for both ART 115\_H and ART 115.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Create and analyze 2D design projects that demonstrate knowledge of two-dimensional theory and practice and reveal personal aesthetic and/or conceptual decision-making.
- Demonstrate use of, and analyze personal aesthetic choices in the creation of 2D projects and relate design projects to the greater context of specific art historical and/or contemporary art issues.
- Identify and demonstrate use of 2D design elements, including lines, shape, form value, pattern, positive and negative space, and 2D organizational elements, including unify, balance, movement, rhythm, focal point, etc. (General vocabulary list for instructor use is filed in the AAD office.)
- Demonstrate the ability to discuss 2D design images, projects and art historical images in a constructive and analytical fashion in relation to specific 2D objectives and media forms.
- Demonstrate aesthetic and conceptual understanding of assigned 2D design content, objectives, materials, and technical concepts.
- Develop and demonstrate the ability to work with preconceived thematic ideas in an organized visual fashion.
- Demonstrate individual visual aesthetic and/or conceptual choices in 2D design projects to develop personal expression.

- Demonstrate and understand 2D design issues in relationship to other 2D/3D disciplines, including painting, printmaking and other media.

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### BI 101\_H - General Biology-Honors

4 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. WR 121-readiness (score of at least 96 on the sentence-skills placement test) recommended. See [lanecc.edu/honors](http://lanecc.edu/honors) for information. BI 101 topics: atoms, molecules, cellular processes, genetics, protein synthesis, photosynthesis, respiration. Lab included. 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.

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### COMM 111\_H - Fundamentals of Public Speaking-Honors

4 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 [lanecc.edu/honors](http://lanecc.edu/honors) for information. 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. Students cannot receive credit for both COMM 111\_H and COMM 111.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Demonstrate basic understanding and competency in speech preparation including selecting appropriate topics, clear and specific organization, use of compelling evidence and support.
- Demonstrate the ability to create a clearly worded thesis and specific purpose statement.
- Distinguish between information and persuasion in a public speaking setting.
- Analyze and develop an argument according to rules of logic, and motivate an audience through the use of appropriate emotional appeals.
- Exhibit skills in audience analysis, critical listening and critiquing speeches.

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### CRWR 242\_H - Creative Writing: Poetry-Honors

4 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 [lanecc.edu/honors](http://lanecc.edu/honors) for information. 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. 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:

- Know how to write their own poetry, and have a portfolio of 5-10 revised, original poems.
- Know how to draft, read critically, and revise their poetry.
- Know how to recognize and utilize a variety of elements of poetry, including sound, rhythm, tone, and figures of speech.
- Have received critiques of their poetry from the instructor and their classmates.
- Learn to read effectively and to help edit the poetry of their classmates.
- Have been introduced to a wide variety of published poetry, including a variety of themes, forms, and styles.
- Learn to use and evaluate traditional and non-traditional forms.

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### ENG 104\_H - Introduction to Literature: Fiction-Honors

4 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 [lanecc.edu/honors](http://lanecc.edu/honors) for information. College-level reading and writing skills (a passing grade in WR 115 or placement into WR 121) are strongly recommended for success. 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. May be offered online. Students cannot receive credit for both ENG 104 and ENG 104\_H.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Distinguish between connotation and denotation and demonstrate how the connotative language helps shape major points of a literary text (poem, story, play).
- Demonstrate an ability to read works of fiction at both a literal and figurative level.
- Articulate familiarity with social and political perspectives on fiction, such as those that consider race, gender, ethnicity, nationality and sexual orientation.
- Identify and define significant literary devices (such as plot, character, setting, theme and point of view) for the purpose of meaningful interpretation.
- Demonstrate an appreciation of the power of fiction to create worlds.
- Demonstrate an awareness of one's self and others as members of a culture
- 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)
- 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)
- Formulate and apply criteria that are appropriate to the context and genre of the literary text when evaluating works of fiction
- Distinguish between unsupported responses and literary-critical judgment when evaluating works of fiction
- Develop initial responses into literary-critical judgment
- Use effective oral and written communication-- including at least one formal essay -- to express literary interpretations and evaluations-- developed independently and/or collaboratively
- Produce a significant amount of interpretive and analytical writing using well-selected textual and other evidence
- Utilize MLA, APA, or equivalent standard style sheet documentation when needed, and edited Standard American English
- Demonstrate ability to use interpretive frameworks to investigate contextual meanings of literature.

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### ENG 105\_H - Introduction to Literature: Drama-Honors

4 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 [lanecc.edu/honors](http://lanecc.edu/honors) for information. 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. 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:

- Distinguish between connotation and denotation and demonstrate how the connotative language helps shape major points of a literary text (poem, story, play).
- Demonstrate an ability to read works of drama at both literal and figurative level.
- Use effective oral and written communication including at least one formal essay to express literary interpretations and evaluations developed independently and/or collaboratively
- Produce a significant amount of interpretive and analytical writing using well-selected textual and other evidence.
- Utilize MLA, APA, or equivalent standard style sheet documentation when needed, and edited Standard American English.
- Gain the ability to respond emotionally and intellectually to plays as a reader and a real-life viewer.
- Be willing to extend consciousness and deepen insight in the possibilities of what it means to be a human being.
- Understand a wide range of dramatic terms such as catharsis, dramatic irony, theater of the absurd, etc.
- Better appreciate the development of character and theme as well as the multiplicity of meaning that lies below the surface plot.



- Demonstrate ability to use interpretive frameworks to investigate contextual meanings of literature.

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### ENG 106\_H - Introduction to Literature: Poetry-Honors

4 Credit(s)

College-level reading and writing skills (a passing grade in WR 115 or placement into WR 121) are strongly recommended for success. 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](http://lanecc.edu/honors) for information. 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. May be offered online. 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:

- Distinguish between connotation and denotation and demonstrate how the connotative language helps shape major points of a literary text (poem, story, play).
- Demonstrate an ability to read works of poetry at both a literal and figurative level.
- Use effective oral and written communication including at least one formal essay to express literary interpretations and evaluations developed independently and/or collaboratively.
- Produce a significant amount of interpretive and analytical writing using well-selected textual and other evidence.
- Utilize MLA, APA, or equivalent standard style sheet documentation when needed, and edited Standard American English.
- Develop and be able to demonstrate a scholarly relationship to poetry, in both its intellectual and emotional aspects.
- Understand and be able to apply poetic terms and devices such as voices, diction, word choice imagery, symbols, rhythm and meter, figures of speech.
- Develop and be able to demonstrate an awareness of the ways in which many types of human experience relate to poetry.
- Develop and be able to demonstrate an awareness of many recognized poets from diverse backgrounds.
- Demonstrate ability to use interpretive frameworks to investigate contextual meanings of literature.

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### HON 280\_H - Co-op Ed: International Work Experience-Honors

1-12 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. WR 121-readiness (score of at least 96 on the sentence-skills placement test) recommended. See [lanecc.edu/honors](http://lanecc.edu/honors) for information. 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](http://ie3global.org) Prerequisite: Instructor approval.

**Prerequisite:** Instructor approval

#### Learning Outcomes

Upon successful completion of this course, the student will:

- Articulate their understanding of social issues and responsibilities, multiculturalism, organizational culture, leadership styles, and sustainability in both home country
- Observe, investigate, document and reflect upon social issues and responsibilities, multiculturalism, organizational culture, leadership styles and sustainability in an international setting
- Demonstrate foundational workplace competencies such as reliability, responsibility, following instructions, team-work, communication skills and taking appropriate initiative.
- Articulate similarities and differences between home country and host country 5- Describe how the international work experience has influenced them personally and professionally

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### PS 297\_H - Environmental Politics-Honors

4 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 [lanecc.edu/honors](http://lanecc.edu/honors) for information. 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. May be offered online. 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:

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.

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### 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. May be offered online. 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](http://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:

- Apply analytical skills to social phenomena in order to understand human behavior. Use critical thinking skills to predict the behavior of ourselves and others in various circumstances. Understand the connection between the brain and behavior. Teaches hypothesis testing
- 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 self and the environment in which one lives. Apply the relevant concepts to life outside the classroom.
- 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 psychology and approaches taken to studying it.
- Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry. Teaches psychological theories and research associated with biological bases of behavior, sensation & perception, consciousness, and development. Teaches the various perspectives on psychology and approaches taken to studying it. Teaches basic descriptive and inferential statistics, and how and what they are used for.
- Utilize appropriate information literacy skills in written and oral communication. Teaches the scientific method, empirical approach to knowledge assessment. Explains hypotheses testing and data analysis. Addresses ethical issues in the use and distribution of information.
- Understand the diversity of human experience and thought, individually and collectively. Teaches basic concepts of psychology, encourages students to explore their implications. Examines the ways in which humans develop and differ.
- Apply knowledge and skills to contemporary problems and issues. Teach how principles of neurochemistry, sensation, perception, consciousness, and development work in real life. Integrate theoretical knowledge and empirical research with practical applications in the real world.

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### **SOC 204\_H - Introduction to Sociology-Honors**

4 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 [lanec.edu/honors](http://lanec.edu/honors) for information. 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. May be offered online. Students cannot receive credit for both SOC 204\_H and SOC 204.

#### **Learning Outcomes**

Upon successful completion of this course, the student will:

- Define and apply fundamental concepts in sociology.
- Utilize the sociological imagination to recognize connections between individual experiences, social structure and processes, and social change.
- Appreciate the value of social science research methods for understanding social realities.
- Recognize the significance of social differentiation (diversity) and globalization in human group life .
- Identify social forces that contribute to issues of concern in contemporary societies.

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### **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. May be offered online. 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 [lanec.edu/honors](http://lanec.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.

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### **WR 121\_H - Academic Composition-Honors**

4 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 [lanec.edu/honors](http://lanec.edu/honors) for information. 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. May be offered online. Students cannot receive credit for both WR 121\_H and WR 121.

**Prerequisite:** With a grade of C- or better or pass in WR 115 or placement test.

#### **Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- The course also introduces students to skills in source analysis, documentation, and beginning research methods.
- Demonstrate critical thinking and reading skills of situations or challenging college-level texts.
- Read actively and rhetorically: engage with complex ideas in order to evaluate and interpret texts.
- 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.
- Develop and organize essays using logic, examples, and illustration, and research to support his/her ideas.
- Engage in the research process as part of an inquiry process.
- Make appropriate and effective rhetorical choices during all stages of the writing process:
- Adopt an appropriate point of view, which takes into account voice, tone, and ethos.
- 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”).
- 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.

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### **WR 122\_H - Argument, Research and Multimodal Composition-Honors**

4 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 [lanec.edu/honors](http://lanec.edu/honors) for information. While continuing the concerns of WR 121-English Composition: Introduction to Academic Writing WR 122-Argument, Style, and Research 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. Students cannot receive credit for both WR 122\_H and WR 122.

**Prerequisite:** WR 121 or WR 121\_H with a grade of C- or better

#### **Learning Outcomes**

Upon successful completion of this course, students should be able to:

- Engage in and value a respectful and free exchange of ideas.
- Demonstrate effective critical thinking and reading skills of college-level texts.
- Make appropriate and effective rhetorical choices within specific Writing Situations during multiple stages of the writing process, including: invention, drafting, revising, and editing.
- Employ appropriate methods of development and support within their written arguments.
- 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.
- Effectively employ and critically analyze the accepted conventions and formatting of academic.

- Identify differences in rhetorical strategies and devices in different systems.
- Develop an understanding of why rhetorical systems differ.
- Develop an understanding of the features and uses of Black American rhetoric.
- Examine the social, historical, cultural, economic, and legal framework of rhetorical systems.

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### WR 227\_H - Technical Writing-Honors

4 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 [lanec.edu/honors](http://lanec.edu/honors) for information. 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. May be offered online. Students cannot receive credit for both WR 227\_H and WR 227.

**Prerequisite:** WR 121 or WR 121\_H with a grade of C- or better

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- The course also introduces students to skills in source analysis, documentation, and beginning research methods.
- Demonstrate critical thinking and reading skills of situations or challenging college-level texts.
- Read actively and rhetorically: engage with complex ideas in order to evaluate and interpret texts.
- 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.
- Develop and organize essays using logic, examples, and illustration, and research to support his/her ideas.
- Engage in the research process as part of an inquiry process.
- Make appropriate and effective rhetorical choices during all stages of the writing process.
- Adopt an appropriate point of view, which takes into account voice, tone, and ethos.
- 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”).
- Identify audience and a clear purpose.
- Shape a thesis and/or controlling idea (implicit or explicit) that expresses a focused approach to ideas, insights, and/or applications.

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## Hotel/Restaurant/Tourism Management

### HRTM 100 - Introduction to Culinary and Hospitality

3 Credit(s)

This is an introductory course designed to provide a broad overview of the hospitality management and culinary arts industry and the various segments that comprise the industry. Emphasis in this course is given to understanding the scope and complexity of this industry, the career opportunities available, and the training and skills necessary to achieve a successful career. Open to the public.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Define hospitality and the philosophy of the hospitality industry.
- Trace the growth and development of the culinary arts, hospitality management and tourism industry.
- Identify the segments of the culinary arts, hospitality management and tourism industry and describe how they interrelate.
- Describe the various cuisines and contributions of leading culinarians.
- Identify the various cuisines and contributions of leading culinarians.
- Identify professional organizations within the field; explain the purposes and benefits.
- Outline the organization, structure and functional areas in various hospitality organizations as a perspective for later courses in menu planning, purchasing, food production and service, food and beverage controls, management, etc.
- Understand math, reading, and speaking skills necessary to be successful in the industry.
- Discuss/evaluate industry trends as they relate to career opportunities and the future of the food industry.

- Understand the physical, emotional and mental demands that this industry requires.
- Judge whether the culinary or hospitality profession suits their tastes and career interests.
- Discuss the attributes of a professional chef.
- Demonstrate service skills that provide exceptional customer service.
- Discuss social, economical, and seasonal reasons for menu selections.
- Understand sustainable standard operating procedures for the industry.
- Demonstrate basic food safety and sanitation principles followed in the industry.
- Understand the concept and importance of the Farm to Table relationship

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### HRTM 104 - Introduction to Travel and Tourism

3 Credit(s)

Open to the Public. This course is designed to provide students with a basic knowledge of tourism-related concepts. There will be an emphasis on community-based sustainable tourism development.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Gain an understanding of ecotourism/green tourism/nature-based tourism: its ideologies, practices, and pitfalls.
- Explore the relationship of tourism and ecotourism to international development issues.
- Understand the relationship between the tourism industry and the natural environment.
- Study factors that influence tourism.
- Explore tools that help industry professionals manage tourism activity.
- Understand how business people, government officials and travelers shape global tourism.
- Understand the impacts, both positive and negative, that tourism creates.

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### HRTM 105 - Restaurant Operations

3 Credit(s)

Open to the public. This course offers a broad overview of restaurant operations. Topics include: bar and beverage management, front and back-of-the-house operations, and basic customer service skills.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Describe the functions of the foodservice industry.
- Evaluate career opportunities in the industry.
- Discuss sales techniques for service personnel.
- Understand inter-relationships between dining room and kitchen.
- Explain purpose of safe and sanitary foodservice operations.

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### HRTM 109 - Principles of Meetings and Convention Management

3 Credit(s)

This course is intended to serve as an overview of the Meeting, Convention, and Special Event Management industry. Students will have a general understanding of the principles, practices, operations and management of the industry.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Identify types of meetings such as sales, dealer, technical executive, training, and public.
- Evaluate the different characteristics of the company meeting, which includes exhibits, duration, the site, geography, lead-time, and time cycle.
- Identify the decision-maker in the organization as the meeting planner or the advertising and sales promotion manager.
- Explain the process of finding the organization and the right person through special meeting publications, business publications, trade directories, trade associations, local business directories, and branch offices.
- Evaluate other sources of convention business, including nonprofit organizations and government agencies.
- Define the incentive travel market and the opportunities they provide hospitality properties during slow periods.
- Select other developments, which afford opportunities for increased business.
- Identify the types of organizations, which may help service meetings more efficiently.
- Define the role of convention bureau.
- Identify the organization of the convention department and the tools used to control the flow of information

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### HRTM 140 - Hospitality Law and Ethics



3 Credit(s)

Open to the Public. Legal and ethical concepts in the hospitality industry are explored. Ethical perspectives are identified and applied to hospitality operations.

### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Identify and distinguish the legal concerns in providing safe and secure accommodations for guests.
- Contribute to the development of an emergency management program that deals with bombs and bomb threats, fires, hurricanes, other natural disasters, robberies, medical emergencies, and terrorism.
- Define preliminary considerations in security programs, including the role of government and security training.
- Identify and explain the security issues travelers face, especially with third world countries.
- Describe the elements of and need for computer security.
- Cite the security concerns involved in reports and record keeping, media relations, VIP guests, and health concerns.
- Contribute to the development of an emergency management program that includes bomb threats; medical/bio emergencies, tornadoes, hurricanes, robberies, and terrorism.

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### HRTM 205 - Managing the Restaurant Operation

3 Credit(s)

This course examines all aspects of a full-service restaurant operation. Students will be introduced to menu planning, beverage management, service, culinary arts, food safety, and sanitation principles. Current industry trends, such as organic food, buying local and environmental management will also be covered.

**Prerequisite:** HRTM 105

### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Understand the history and nature of the restaurant industry.
- Understand the mechanics of menu design and its impact on the operation.
- Gain an understanding the components of a kitchen including: food production, safety and sanitization.
- Understand budgeting, purchasing, and cost control as it relates to the operation.
- Gain a thorough understanding of service and proper front-of-the-house procedures.
- Understand the impact of buying local, organic food on the environment and in the restaurant.
- Become familiar with the “gate to plate” concept and how it relates to the overall success of the restaurant.

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### HRTM 220 - Sustainability in the Hospitality Industry

2 Credit(s)

A multi-dimensional course introducing global sustainability and environmental movements, their impact on the hospitality industry, and responses to and opportunities associated with sustainability within the industry.

**Prerequisite:** CA/HRTM majors only.

### Learning Outcomes

Upon completion of this course, students will be able to:

- Provide an overview of the global environmental field as it stands today.
- Understand concepts associated with the environmental, social, and cultural impacts of the tourism and hospitality industry.
- Have a clear understanding of environmental law, voluntary initiatives and principles for sustainable development in the tourism and hospitality industry.
- Define and explain the five pillars of sustainability.
- Understand the triple bottom-line concept as it relates to the hospitality industry.

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### HRTM 230 - Hotel Operations 1

3 Credit(s)

This course is an introduction to the hotel industry. General principles of hotel management including the basic working knowledge of hotel departments will be covered. This course places an emphasis on Sustainable Standard Operating Procedures for the hospitality industry.

**Prerequisite:** CA/HRTM majors only

### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Understand how a hotel registers guests.

- Identify the relationships among the hotel departments
- Identify the importance of food and beverage operations to hotel revenues
- Understand quality and the relationship to guest services, housekeeping, and food and beverage
- Identify the qualities of property management and how it relates to the quality of the guest experience and financial operations

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### HRTM 231 - Hotel Operations 2

3 Credit(s)

This course will continue to build on the fundamentals covered in HRTM 230 with a more in depth look at the management structure and functions of the executive committee. This course will focus on case studies as well as roundtable discussions with hotel executives.

**Prerequisite:** HRTM 230

### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Understanding the relationships hotels have to the gaming industry.
- Understand Innkeeper law and ethics.
- Know the unique qualities of resorts and how they differ from hotels.
- Be able to enter guests into a PMS system.
- Accounting relationships within the hotel.
- Understand the management structure and functions of the Executive committee.
- Understand Sustainable Standard Operating Procedures

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### HRTM 260 - Hospitality Human Resources and Supervision

3 Credit(s)

Examines the fundamentals of supervision that include planning, basic management functions, and customer relations and service. Focus is on building relationships with diverse employees through communication, motivation, supervision and leadership, and the human resources environment.

**Prerequisite:** CAHM majors only

### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Identify fundamental supervisory principles.
- Explain the steps that supervisors can take to communicate effectively on the job.
- Identify the components of a progressive disciplinary program.
- Understand how to deal with conflict in the workplace
- Describe actions supervisors can take to minimize employee resistance to change.
- Explain why it is important for supervisors to take control of their personal development, and describe how to execute a career development plan.
- Develop a training program for a restaurant/hotel department.

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### HRTM 265 - Food and Beverage Cost controls

3 Credit(s)

This course provides a study of the cost control aspects of hospitality operations, including: budgeting, forecasting, financial analysis, food and labor cost controls, beverage controls, and inventory management.

**Prerequisite:** CAHM majors only; HRTM 105 and MTH 025 or higher

### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Describe the components involved in making decisions related to operation of a food service business.
- Analyze these components to make decisions, which affect the overall profitability of the business.
- Identify the components of the cost-sales relationships incurred in the food service industry.
- Calculate food costs and percentages.
- Understand the food and beverage controls that impact profitability.

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### HRTM 286 - Bar and Beverage Management

3 Credit(s)

Open to the public. This course is an introduction to the fundamental areas of beverage operations. Includes planning of the bar, bar staffing and training, legal regulations, standardized recipes, drink costing and pricing, and beverage production methods and mixology. Other topics will be included.

### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- How different alcoholic beverages are made.
- The history of wine, beer, and spirits.

- The wine producing areas of the world.
- How wine and food complement each other.
- The Oregon Liquor Control Commission (OLCC) and how it regulates the hospitality industry.
- How wine lists are developed and costed.
- Basic bar controls.

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### **HRTM 292 - Dining Room and Kitchen Lab**

4 Credit(s)

Students will work in a variety of front-of-house positions in the campus restaurant, developing skills in restaurant management and service.

#### **Learning Outcomes**

Upon successful completion of this course, the student:

- Recognize quality in food products to be purchased.
- Practice different kinds of service by serving food to other students and the public.
- Recognize the importance of food presentation including creating and making decorations and garnishes.
- Recognize proper ways to prepare vegetables, including methods of wok cooking, steaming, and oven cookery.
- Identify principles of menu layout and design.
- Understand the principles of nutrition & menu development.

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## **Human 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:

- Demonstrate knowledge of the basic pharmacology and commonly abused drugs.
- Build knowledge skills and attitudes to improve personal performance in treating the user.
- List models of treatment for substance use and disorders.

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### **HS 107 - Aging: A Social and Developmental Perspective**

3 Credit(s)

This course introduces students to the field of gerontology. As our population ages, we continue to have a need to have service providers who are informed, trained and educated around the issues facing seniors. Students will learn skills that will assist them in working with elders and their families. Students will be introduced to the various service settings as well as the needs of special populations. Spirituality and alternative forms of care will also be explored.

#### **Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Understand effective practices with elders
- Demonstrate how to case manage in the field of gerontology
- Build knowledge, skills, and attitudes to improve personal performance helping elders
- Demonstrate knowledge of the different types of service settings for elders

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### **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, the student should be able to:

- Complete a resume.

- List the characteristics of trauma-informed services.
- Identify career options in the human services field.
- List the stages of professional development that occur between the novice and the senior practitioner.

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### **HS 151 - Issues in Assessing and Treating the Problem Gambler**

1 Credit(s)

Assessing and treating the problem gambler: Overview of the criteria for problem and pathological gambling, cognitive distortions related to problem gamblers, updated research on problem gambling and the brain, working with families of problem gamblers, and issues related to special populations and gambling.

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### **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, the student should be able to:

- Define the purpose of interviewing and the role of the interviewer.
- Demonstrate an understanding of the sequencing and structure of an effective interview.
- Demonstrate skills in assessment and active listening skills.
- Demonstrate problem solving skills and strategies for helping clients change behavior.

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### **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.

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### **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, the student should be able to:

- Demonstrate understanding of Human Services delivery system.
- Identify various systems that make up Human Services.
- List a range of Human Service worker competencies and career paths.
- Demonstrate a basic understanding of the ethics and principles of the Human Services worker

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### **HS 209 - Crisis Intervention and Prevention**

3 Credit(s)

This course will introduce human service and correctional personnel 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:

- Define crisis intervention and the stages of crisis development and appropriate responses to each stage
- List characteristics of people in crisis
- Identify the potential for violent or disruptive behavior during a crisis
- List the 5 steps of empathic listening
- Demonstrate how to reduce tension in a crisis

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**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:

- Describe the risk factors, protective processes and resiliency factors related to prevention strategies.
- Outline the steps to build a successful prevention program.
- Demonstrate why and how prevention professionals should be sensitive to other cultures and diverse populations.
- Describe the relationship between prevention strategies and human development.
- List local programs and national models of prevention programs.
- Describe how addiction impacts the body, mind and spirit.
- Describe the role of media in prevention.
- Describe evaluation methods used in prevention.
- List ethical issues and dilemmas faced by prevention practitioners.

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**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.

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**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.

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**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:

- Be knowledgeable about the potential benefits and drawbacks of group interventions; group ethics; group member selection; developmental stages of groups; types of groups.
- 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.
- Identify processes that limit or hinder the group and processes that stimulate and encourage the group.
- 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

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**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:

- Have an introduction to the field of ethics and law in human services.
- Have an introduction to professional and ethical behavior in human services.

- Learn about ethical dilemmas and legal requirements which might present themselves in the field of human services.
- Learn a framework for making sound ethical decisions.
- Examine personal values, attitudes and behaviors and how they may impact professional work in the field of human services.

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**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:

- Define HIV/AIDS, Hepatitis C, Tuberculosis, and Herpes at risk behavior.
- Thoroughly understand routes of HIV/AIDS, Hepatitis C, Tuberculosis and Herpes transmission.
- Understand the various epidemiological factors that promote HIV/AIDS, Hepatitis C, Tuberculosis and Herpes transmission to different populations.
- Recognize the deleterious effects of addressing HIV/AIDS, Hepatitis C, Tuberculosis and Herpes only in at risk populations.
- Understand the HIV, Hepatitis C and Tuberculosis testing procedure and its limitations.
- Comprehend the effects of the HIV/AIDS Hepatitis C and Tuberculosis on a global scale.
- Examine the government's treatment of HIV/AIDS, Hepatitis C and Tuberculosis in the United States.
- Understand chemical use and dependency and how it relates to high risk behavior and HIV/AIDS, Hepatitis C Tuberculosis and Herpes infection.
- Examine basic HIV/AIDS, Hepatitis C, Tuberculosis, and Herpes education methods.
- Understand the experiences of both HIV/AIDS seropositive individuals and persons who have engaged in high-risk behavior.
- Discern the effectiveness of counseling the directives on at risk individual cases.
- Understand the ethical and legal issues involved in HIV/AIDS screening, testing and counseling

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**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:

- Identify how contemporary familial, social, economic, and cultural realities shape attitudes toward grief and loss
- Recognize processes to identify, interpret, and reconstruct loss narratives
- Formulate methods that assist grievers to construct loss strategies and reinterpret loss narratives.
- Develop a "tool box" of resources for oneself and individuals who anticipate or who are experiencing a loss
- Develop an understanding of personal issues that will support or impede the ability to support individuals who are grieving or anticipating a loss

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**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:

- Describe the Stage Model of the Process of Change.
- Identify theoretical models of motivation and brief interventions.
- Describe the key elements of the motivational interviewing style and how it differs from other approaches.
- List the therapeutic tasks at each stage of change and demonstrate skills for each stage.
- List and demonstrate the five general principles of motivational interviewing.
- Describe and demonstrate the structuring of the motivational interview.
- Demonstrate dealing effectively with client resistance.
- Demonstrate an attitude of respect, warmth, non-judgment, interest, and optimism that change is possible

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### 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:

- Describe and differentiate between three approaches to Cognitive-Behavioral Therapy (CBT) including how behavior changes as a result of CBT interventions.
- Demonstrate an understanding of mood disorders, anxiety disorders, maladaptive thinking and other issues from a CBT perspective.
- Demonstrate CBT techniques.
- Demonstrate the structure of CBT interviews: first, second, and subsequent sessions.
- Demonstrate how to assess clients in identifying automatic thoughts and emotions.
- Demonstrate how to assess and evaluate cognitive distortions.
- Demonstrate how to modify belief systems.
- List effective programs of CBT that address the needs of special populations.
- Demonstrate the effective use of homework in CBT.
- Demonstrate an attitude of respect, non-judgment, interest, and optimism.
- Demonstrate a knowledge of sensitivity to culture, ethnicity, class, disability, and gender differences.
- The success of this class and the richness of our experience depend on the input and feedback of each person.

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### 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:

- List the stages of solution building.
- 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

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### 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. Instructional methods will include lecture, discussion, films, small group activities, and guest speakers.

**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

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### 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

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## Humanities

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### 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. Offered online only.

### 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.

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## Independent Study

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### 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.

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## Journalism

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### 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.

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### 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:

- Demonstrate advanced understanding of news reporting and news writing as a process. Explore journalist writing processes.
- Develop and demonstrate the ability to understand the impact of the communication process.
- Develop an understanding of news values and how news impacts people on a local, regional, national and global level.
- Develop writing skills based on journalistic integrity and professional ethics

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### J 234 - Photojournalism 2

4 Credit(s)

A continuation of Photojournalism with the continued discussion of content and ethics of the field. Students learn how to create editorials, identify the differences between news and human interest, develop funding for non-mainstream stories, and self-promote in the competitive field of photojournalism. Students prepare their work through editorial processing and presentation.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Understand the breakdown of an image and the use of techniques in creating the input needed for a story.
- Work on location at a news event.
- Understand the importance of human interest stories and the difference

between human interest and news stories.

- Create portrait and event work for news stories.
- Create a photo story and practicing editorial processes on work.
- Create current media presentation.
- Present work.

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## Legal Assistant

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### LA 100 - Legal Procedures

4 Credit(s)

Pre-requisites: Working knowledge of MS Word, accurate keyboarding speed of 45 wpm, and placement test scores into WR121 or WR115 or instructor permission. This course is an introduction to the roles and duties of legal support personnel and administrative procedures specific to law offices. Students will explore legal office careers, learn legal terminology, and learn about the attorney/client relationship. Introductory preparation of legal pleadings, correspondence, and documents including contracts, wills and trusts. Extensive coverage of written and oral communications needed for law practice, law office procedures, ethics, legal terminology, the court system, the law library, and notary public duties. Instructor enforced prerequisites: Working knowledge of MS Word, accurate keyboarding speed of 45 wpm, placement test scores into WR 121 and MTH 065 or instructor permission. May be offered online. Offered through Umpqua Community College. A host-provider fee may apply.

**Prerequisite:** Working knowledge of MS Word, accurate keyboarding speed of 45 wpm, and placement test scores into WR 121 or WR 115 or instructor permission. Instructor enforced prerequisites: Working knowledge of MS Word, accurate keyboarding speed of 45 wpm, placement test scores into WR 121 and MTH 065 or instructor permission.

**Corequisite:** LA 102

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Describe the roles and duties of legal support personnel and lawyers.
- Explain the Oregon Code of Professional Responsibility, the NALS Code of Ethics and Professional Responsibility, and common ethical issues facing legal assistants.
- Demonstrate administrative procedures specific to law offices, such as filing, mail processing, timekeeping, billing, and docket control.
- Identify common legal research materials and the role of legal research and analysis involving legal disputes.
- Accurately prepare specialized legal documents with emphasis on formatting, punctuation, capitalization, word division, and number usage.
- Apply legal terminology in context.
- Identify and create non-court documents and standardized legal forms.
- Describe basic requirements for filing documents with the court.
- Develop a forms file.

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### LA 101 - Introduction to Paralegal Studies

3 Credit(s)

An introduction to the role and duties of the paralegal including such topics as regulations of the legal profession, law office management, human relations skills, legal terminology, techniques of interviewing, and methods of discovery. Preparation for assisting in the legal environment by drafting legal pleadings and case briefing. Reviewing local, trial, and state court laws. May be offered online. Offered through Umpqua Community College. A host-provider fee may apply.

**Prerequisite:** LA 100, or instructor consent

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Describe the role of paralegals within the legal profession
- Define and identify Unauthorized Practice of Law (UPL)
- Apply Code of Professional Responsibility and Rules Governing Paralegals
- Identify specific areas of employment opportunities for paralegals
- Describe the stages of the legal process from initial contact to the appellate process
- Apply proper grammatical and organizational skills of legal analysis in document preparation
- Describe discovery rules and processes
- Identify requirements for recording and filing documents with proper court offices
- Draft legal documents including letters and pleadings
- Track billable hours

- Explain methods for organizing case files
- Apply state and local court rules

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### LA 102 - Legal Terminology

3 Credit(s)

In-depth course covering legal terminology used in a typical law office. Students will read and understand legal terminology, and they will correctly spell, define, pronounce, and apply legal terms. Practice in use of legal dictionary and thesaurus. May be offered online. Offered through Umpqua Community College. A host-provider fee may apply.

#### Learning Outcomes

Upon successful completion of this course, student will be able to:

- Define and restate legal terminology in own words
- Identify and describe the meaning of legal terminology used in a court setting
- Categorize terminology used by specific areas of law
- Apply legal terminology and identify appropriate usage
- Identify the five principal sources of law

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### LA 105 - Civil Litigation

3 Credit(s)

This course will focus on the various stages of the civil litigation process. This will include the initial client interview, the process leading to the filing of a civil lawsuit, its resolution by settlement or trial, and a brief review of the appellate process. The course emphasis will be on the actual preparation of the documents, with a major focus on the discovery phase of the civil litigation process. This course will demonstrate how each stage of civil litigation builds, relates, and is dependent upon the others. May be offered online. Offered through Umpqua Community College. A host-provider fee may apply.

**Prerequisite:** LA 101 and LA 128 or instructor consent

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Develop an initial client interview checklist and be able to express the reasons why the questions are relevant.
- Describe the investigation and fact gathering necessary for possible settlement of claims before initiation of a lawsuit.
- Draft a complaint, answer, and motion or reply with supporting memorandum.
- Draft interrogatories, requests for admission, answer to these documents, and have a basic understanding of other forms of discovery.
- Explain the manner in which pretrial statements by a party or witness may be used for purposes of trial.
- Describe the pretrial and trial procedure and the role of the paralegal in assisting the attorney in these stages.
- List the sources of civil rules and rules of evidence.
- Evaluate and apply the rules of ethics and the code of professional responsibility as they would apply in an instructor-selected civil litigation fact pattern.
- Draft and present jury instructions for an instructor-selected civil litigation fact pattern.
- Draft a brief in support of a motion for summary judgment.

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### LA 128 - Legal Procedures 2

4 Credit(s)

Students will work on legal office projects designed to utilize a project-based approach to completing legal office activities that involve legal document preparation, layout, formatting, internet research, and transcription. Students will depict a law office setting for the projects where the student is to serve as a floating legal assistant for a number of diverse individuals practicing various types of law. May be offered online. Offered through Umpqua Community College. A host-provider fee may apply.

**Prerequisite:** LA 100, BT 108, and LA 102, or instructor consent

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Explain the roles and duties of staff in a legal office
- Operate transcription software
- Transcribe and format legal documents from dictation
- Explain the components of legal documents
- Explain the components of a business letter
- Format a business letter
- Apply ORS and SLCR formatting rules in legal document preparation
- Describe how Unauthorized Practice of Law (UPL) applies to legal document preparation

- Utilize the internet for research and problem solving
- Interpret legal terminology

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### LA 132 - Ethics for the Legal Professional

3 Credit(s)

Covers the study of ethics as it relates to the legal profession. Study the concept of "ethics" and "being ethical." Explore the differences between morality and rules of ethics. Introduce the rules of professional responsibility as they pertain to paralegals (and lawyers). Engage in discussions and opinions of ethical issues in real-world situations. Introduce and enhance legal vocabulary as is used in ethics. Introduce and study the Oregon Rules of Ethics and the practical application. May be offered online. Offered through Umpqua Community College. A host-provider fee may apply.

**Prerequisite:** LA 101 and LA 128, or instructor consent

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Recognize and avoid ethical problems
- Evaluate information to identify ethical issues
- Describe sources to research potential courses of action for ethical issues
- Analyze ethical situations and apply ethical rules
- Describe ABA Model Rules and Oregon Rules of Ethics
- Explain the relationship of ethics to confidentiality, competence, fees, billing, conflicts of interest, and Unauthorized Practice of Law (UPL)

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## Library

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### 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. May be offered online.

#### Learning Outcomes

Upon successful completion of this course, the student will:

- Appreciate the nature of scholarly conversation, as well as the role and organization of information in contemporary society and in the academic library.
- Demonstrate an understanding of research as a recursive process, requiring creativity and persistence.
- Efficiently search for and locate information online using the free Web.
- Evaluate websites and other materials as to their relevance, currency, authority, purpose, and point of view.
- Select and develop a suitable topic for research, and formulate a list of relevant keywords using websites, Library databases and other research tools.
- Search for and locate relevant books at the Lane Community College Library and at other libraries.
- Search for and locate relevant articles from newspapers, popular magazines, and scholarly journals.
- 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.

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### LIB 199FN - Fake News and Information Warfare

2 Credit(s)

Fake news is nothing new, but most Americans are unaware of the full extent to which various interests guide, constrain, repress, or censor their information environment, their beliefs, and their self-expression. This course will inform students of the civil liberties granted to them by the US Constitution and give them the tools they need in order to become more sophisticated and critical online information consumers. In the context of information warfare, it makes sense to learn how to fight.

#### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Recognize potential information-related governmental violations of civil liberties, particularly the 1st, 4th, and 6th amendments to the US Constitution.
- Assess their own personal media echo chamber in terms of politics and market niche.
- Investigate other sources of information aside from those already in their echo chamber.
- Evaluate online media on the basis of critical thinking, standard measures, and external sources of information.



- Develop and establish new analytic habits with regard to media consumption.
- Describe and summarize a wide variety of forms of bias, influence, control, and censorship in media, and learn techniques to empower themselves to counter it.
- Practice productively communicating with others who disagree with them.

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## Manufacturing

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### 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.

**Prerequisite:** MFG 151. Enrollment by consent only. See your Academic Advisor or Program Coordinator about enrollment.

#### Learning Outcomes

Upon successful completion of this course the student will:

- Recall and describe the CNC machinery and processes used in a modern manufacturing environments.

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### 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 and CS 120 or assessment.

#### Learning Outcomes

Upon successful completion of this course students will be able to:

- 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.

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### 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:

- 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.

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### 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:

- 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.

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### 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:

- Program, setup and run accurate, quality parts using Haas CNC Mills.

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### 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:

- Program, setup and run accurate, quality parts using Haas CNC Lathes.

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### 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:

- Demonstrate their CNC machining skills by designing and producing complex parts on the CNC mill, CNC lathe and support equipment.

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### 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:

- Demonstrate familiarity with 4 axis lathe and multi-axis mill programming, setup and operation.

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### 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.

**Prerequisite:** MTH 020 or assessment or instructor consent

#### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Safely operate in a manufacturing environment.
- Recognize and describe safety hazards and ergonomic issues as well as explain how organization and cleanliness affect safe and efficient performance.

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### 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:

- Solve problems using basic math related to manufacturing, for example determining proper speeds and feeds for cutting conditions.
- Solve more complex manufacturing problems using the cartesian coordinate system and trigonometry.
- Determine the proper measurement tools used for different applications and be able to demonstrate their use.

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### 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:

- Recall and describe concepts of basic metallurgy, tool geometry, order of operations and machining strategies as they apply to manufacturing projects.
- Apply these concepts to safely and efficiently plan and complete shop projects.

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### 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:

- Demonstrated their ability to apply machining skills learned in lectures to a series of shop projects utilizing manual mills, lathes and shop support equipment.

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#### **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:

- Demonstrate their ability to apply machining skills learned in lectures to a series of shop projects utilizing manual mills, lathes and shop support equipment.

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#### **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:

- Demonstrate their ability to apply machining skills learned in lectures to a series of shop projects utilizing manual mills, lathes and shop support equipment.

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#### **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:

- 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.

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#### **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.

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#### **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.

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#### **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.

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#### **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:

- Create solid models in Mastercam and apply advanced toolpaths to them.
- Use machine modeling techniques for toolpath verification and collision avoidance.

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#### **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.

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#### **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 demonstrated their ability to apply machining skills learned in lectures to a series of shop projects utilizing manual mills, lathes and shop support equipment.

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## **Mathematics**

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#### **CG 123 - Amplify My Math Preparation (AMMP)**

1 Credit(s)

This course provides a structured setting, hosted by the Math Resource Center, for students to remediate core math skills for success in their current and future math course work. As part of this course, students participate in activities designed to strengthen previously-learned math skills, 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.

#### **Learning Outcomes**

Upon successful completion of this course, students will be able to:

- Explain the factors and characteristics that contribute to success in a math class.
- Apply strategies for developing an internal locus of control, productive perseverance, self-efficacy, and self-esteem.
- Explain and apply techniques to improve listening, reading, test-taking, and note-taking in traditional and online math classes.
- Explain the factors and characteristics that contribute to success in a math class.
- Explain personal learning styles and how they can improve memory.
- Develop a study schedule and positive study environment plan.
- Develop core math skills in preparation for program math courses.

- Apply techniques for test, math, and general anxiety reduction.

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### 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.

**Prerequisite:** Placement test or instructor consent

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Add, subtract, multiply, and divide whole numbers
- Identify characteristics of even, odd, prime, and composite numbers
- Solve real world application problems using whole numbers
- Order whole numbers using  $<$  and  $>$
- List factors and multiples of a given number
- Compute problems using the order of operations
- Use math vocabulary
- Compute area and perimeter of rectangles using whole numbers
- Add, subtract, multiply, and divide fractions with like and unlike denominators
- Reduce fractions
- Compare fractions using  $<$ ,  $>$  or  $=$
- Convert fractions to decimals
- Solve real world problems using fractions
- Compute area and perimeter of rectangles using fractions
- Use vocabulary of fraction terms
- Add, subtract, multiply, and divide using decimals
- Identify place value in decimal numbers
- Compare decimals using  $<$ ,  $>$  or  $=$
- Convert decimals to fractions
- Solve real world application problems using decimals
- Compute area and perimeter of rectangles using decimals
- Selects appropriate math study strategies
- Monitors and evaluates personal confidence progress
- Utilizes appropriate math resources

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### 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 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:

- Apply reasoning and problem solving skills to basic mathematics problems.
- Use estimation in basic math problems.
- Check the reasonableness of answers.
- Perform fraction computations and applications with accuracy.
- Perform decimal computations and applications with accuracy.
- Write and simplify ratios and rates.
- Recognize when and where ratios or proportions apply.
- Set up and solve proportions.
- Convert between fractions, decimals, and percents.
- Solve the three basic types of percent problems.
- Set up and solve percent application problems.
- Solve applications using area and perimeter of simple geometric shapes.
- Solve basic equations of the type  $a + x = b$  and  $ax = b$ , involving whole numbers, fractions and decimals.

- Use a scientific calculator to explore and solve basic math problems.
- Apply study skills for learning mathematics and for coping with math anxiety.
- Use the symbols and vocabulary of basic mathematics correctly.
- Use American and metric measurement

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### 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 test.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- 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.
- 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.
- 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.
- Use basic math for applications pertaining to an industrial business such as a culinary arts business, converting measurements, computing percent yields on supplies.
- Use basic math for applications pertaining to measurements, use of metrics, cost of residential electricity, converting square units, computing areas.

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### 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 test.

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### 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 test.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Practice decimal and fraction operations and apply to solve applications.
- Demonstrate the correct use of English, metric and apothecary units of measurement.
- Solve problems using unit (dimensional) analysis.
- Apply concepts of approximate numbers for rounding measurements.
- Demonstrate the correct use of labels for measurements, applications, and graphs.
- Use basic geometric formulas for area and perimeter of quadrilaterals.
- Compute with signed numbers.
- Solve equations and formulas for one variable.
- Interpret and create line graphs.
- Calculate and label slope of line graphs.
- Solve problems involving percents.



- Solve problems involving proportions for solutions and variation.
- Use and compare Fahrenheit, Celsius, and Kelvin temperature scales.
- Find the volume and density of objects.
- Calculate pH quantities involving logarithms.
- Calculate dosages for oral meds and injected meds including reconstituted liquids.
- Use and compute with exponential and scientific notation.
- Calculate both by hand and scientific calculator when appropriate.

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### 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 test.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- 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.
- Perform addition, subtraction, multiplication, and division of rational numbers.
- 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.
- Solve linear equations and inequalities. Solve linear equations and formulas algebraically. Solve linear inequalities and graph their solutions on a number line.
- 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.
- 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.
- 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.)

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### 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

Learning Objectives:

- Maintain, use, and expand skills and concepts learned in previous mathematics courses. Solve linear equations algebraically. Calculate slope of a line and find intercepts. Graph equations in two variables. Write equations in point-slope form and slope-intercept form.
- Solve linear systems of two equations in two unknowns. Solve algebraically and by graphing. Solve application problems involving linear systems of equations. (Includes simple interest, motion, and mixture problems.)
- Evaluate and/or simplify expressions using the rules of (integer) exponents.
- Use scientific notation.
- Use the terminology of polynomials and add, subtract, multiply and divide polynomials. Recognize and use the terminology of polynomials. Evaluate

polynomials. Add, subtract, and multiply polynomials. Divide a polynomial by a monomial.

- Factor polynomials, including multivariable polynomials. Factor polynomials by removing a common monomial factor. Factor trinomials. Factor special products.
- Recognize and use quadratic equations. Sketch the graph of a quadratic equation in two variables and identify the intercepts and the vertex graphically. Solve a quadratic equation by factoring. Solve application problems by writing and solving quadratic equations, by factoring. (Includes applications involving the Pythagorean Theorem.)
- Recognize and use rational expressions. Recognize values of a variable that make a rational expression undefined. Reduce rational expressions to lowest terms. Multiply and divide rational expressions. Add and subtract rational expressions with like denominators. Find the least common denominator of two or more rational expressions. Add and subtract rational expressions with unlike denominators.
- 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.)

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### MTH 070 - Introductory Algebra

5 Credit(s)

MTH 070 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, rational expressions, and exponents.

**Prerequisite:** Placement test within the past two years

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- 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.
- Perform addition, subtraction, multiplication, and division of rational numbers.
- 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.
- Solve linear equations and formulas algebraically. Solve linear inequalities, graph their solutions on a number line, and use interval notation.
- Use algebra to solve application problems. Translate verbal models into algebraic expressions and/or equations to solve problems. Solve problems using ratios and proportions. Solve problems involving similar triangles. Solve geometry problems involving perimeter, area, and volume.
- 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 from a 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. Use the point-slope form of the equation of a line. Recognize the relationship between the slopes of two lines that are parallel or perpendicular.
- Solve linear systems of two equations algebraically and graphically. Solve application problems involving linear systems of equations (including simple interest, motion, and mixture problems.)
- Evaluate and/or simplify expressions using the rules of exponents.
- Use scientific notation.
- Recognize and use the terminology of polynomials. Evaluate polynomials. Add, subtract, multiply, and divide polynomials (by a monomial).
- Factor polynomials, including multivariable polynomials. Factor polynomials by removing a common monomial factor. Factor polynomials by grouping. Factor trinomials. Factor special products. 1
- Recognize and use quadratic equations. Sketch the graph of a quadratic equation in two variables and identify the intercepts and the vertex graphically. Solve a quadratic equation by factoring. Solve applications by writing and solving quadratic equations (by factoring), including problems involving the Pythagorean Theorem.

- Recognize and use rational expressions. Recognize values of a variable that make a rational expression undefined. Reduce rational expressions to lowest terms. Multiply and divide rational expressions. Add and subtract rational expressions with like denominators. Find the least common denominator of two or more rational expressions. Add and subtract rational expressions with unlike denominators.
- Make appropriate and efficient use of a scientific calculator.

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### MTH 075 - Applied Algebra for Technicians

4 Credit(s)

MTH 075 Applied Algebra 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 test.

#### Learning Outcomes

Learning Objectives: Upon course completion, the student will demonstrate an understanding of the vocabulary for each of these areas: Signed Numbers; Integer Exponents; Multi-step Formulas (including Variation); Algebraic Expressions; Cartesian Coordinate System; Linear Equations; Quadratic Equations Students will also be able to demonstrate the ability to solve problems using: Signed Numbers; Integer Exponents; Multi-step Formulas (including Variation); Algebraic Expressions; Cartesian Coordinate System; Linear Equations; Quadratic Equations; Analyze and solve problems using a variety of problem-solving techniques including patterns, tables, graphs and spreadsheets.

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### MTH 082 - Math for Network Operations

4 Credit(s)

This course satisfies math requirements for students in the Computer Networking program. Topics include understanding different number bases, binary math and logical operators, hexadecimal color representations, basic internet protocol math, hashing and checksum algorithms, and basic cryptography.

**Prerequisite:** MTH 020 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 will:

- Understand different number bases
- Perform operations in base 2 (binary)
- Understand basic logical operators
- Understand and use basic IPv4 math 5- Understand and perform basic cryptography 6-Understand and use hashing/checksum algorithms

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### 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 060 or MTH 075, completed within the past two years with a grade of C- or better, or placement test.

#### Learning Outcomes

Upon completion of this course the student should be able to:

- Determine angle measurements in drawings involving triangles, parallel lines, and central angles.
- Use a protractor appropriately.
- Name basic shapes and describe their properties.
- Determine what folds up into a simple 3D shape.
- Apply properties of isosceles and equilateral triangles.
- Utilize the US Customary and metric system of units for length, area, and volume.

- Use the US Customary and metric system of units for temperature and weight.
- Apply unit analysis to measurements including square and cubic units.
- Use conversion charts to convert measurements.
- Apply densities to determine weight or volume.
- Calculate perimeters, areas, volumes, and surface areas of geometric shapes.
- Evaluate formulas related to geometric measure.
- Solve formulas and simple equations for given variables.
- Solve applied ratio and proportion problems.
- Apply properties of similar triangles to find lengths.
- Apply properties of right triangles and use the Pythagorean Theorem.
- Apply trigonometric ratios to determine angles and lengths in right triangles.
- Apply the Law of Sines and the Law of Cosines. (Optional)
- Solve application problems involving geometry and measurement appropriate to technical fields.
- Simplify elementary algebraic expressions.
- Solve elementary algebraic equations and formulas.

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### MTH 095 - Intermediate Algebra

5 Credit(s)

Topics include equations, function notation, polynomials, coordinate graphing, rational equations, radical equations, exponents, quadratic functions, 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, MTH 070 or equivalent course 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:

- Use prerequisite concepts and skills of the arithmetic of real numbers.
- Manipulate and evaluate expressions involving exponents, and use scientific notation.
- Simplify expressions involving polynomials, including factoring.
- Simplify and perform operations involving rational expressions.
- Solve equations involving rational expressions.
- Solve application problems leading to equations involving rational expressions.
- Use function notation and distinguish between input and output.
- Write the equation of a line and graph lines on a rectangular coordinate system.
- Solve linear equations and apply linear equations to application problems.
- Solve and graph a linear inequality, and use interval notation.
- Simplify and perform operations involving radical expressions.
- Solve equations involving radical expressions.
- Solve application problems leading to equations involving rational expressions.
- Write the square root of a negative number in terms of  $i$ , and operate with complex numbers.
- Solve quadratic equations by taking square roots, by completing the square, and by the quadratic formula.
- Given a quadratic function find its vertex, axis of symmetry, and intercepts, and graph the parabola.
- Model and solve application problems involving quadratic equations and functions.
- Evaluate an exponential function.
- Translate between equivalent exponential and logarithmic notations.
- Model and solve application problems involving exponential and logarithmic equations.
- Use a scientific calculator when appropriate and in an efficient manner.

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### 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. This course is the geometry prerequisite for MTH 112, MTH 231, and MTH 251. MTH 097 is strongly recommended for MTH 111.

**Prerequisite:** MTH 095, MTH 111, or equivalent course with a grade of C- or

better in the past two years, or placement test.

### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Use inductive reasoning to discover geometric relationships.
- Know and be able to use the common terms for 2 and 3 dimensional geometric figures.
- Understand concepts of perimeter, area, volume, and surface area.
- Apply the Pythagorean theorem to a variety of situations.
- Identify congruent triangles.
- Apply the theory of parallel lines in appropriate situations.
- Apply similar triangles and the basic trigonometric relations in applied situations.
- Use tools such as the compass, protractor, and computer to create geometric diagrams and patterns. 9. Use algebra to solve geometric problems.
- Understand and write simple proofs.
- Explain the application of geometry to a chosen topic of interest (project-optional).

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### 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, MTH 106, and MTH 107.

**Prerequisite:** MTH 020 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 will:

- Engage effectively with contextual and openended mathematical problems.
- Interpret quantitative information presented numerically, verbally or graphically.
- Create and use mathematical models.
- Demonstrate critical thinking in quantitative settings.
- Express mathematical ideas vocally and in writing.
- Apply mathematical skills with civic and ethical awareness.
- Make appropriate use of calculators and spreadsheet software.
- Demonstrate mathematical skills for college readiness.
- Numeracy: Perform operations with rational numbers; use unit analysis.
- Algebra: Simplify expressions; solve linear equations and proportions.
- Geometry: Apply perimeter, area, similarity, and the Pythagorean theorem.
- Analytic Geometry: Graph linear equations and use slope-intercept form.
- Statistics: Interpret frequency graphs and measures of center.
- Selected Topics: Apply elementary concepts from areas such as set theory, number theory, logic, etc.

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### MTH 105 - Math in Society

4 Credit(s)

MTH 105, 106, and 107 is a three-course sequence but may be taken in any order. MTH 105 is survey of mathematical topics and applications of those topics for non-science majors including probability, statistics, finance and exponential modeling problem solving.

**Prerequisite:** MTH 095, MTH 098, or equivalent course with a grade of C- or better within the past two years, or placement test.

### Learning Outcomes

After successful completion of this course, students will be able to:

- 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.
- 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.
- 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.

- 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.
- Create ideas and solutions: a) Reflect on successes, failures, and obstacles encountered in the problem-solving process. b) Assess mistakes and rework solutions.

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### 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. These applications include at least two of the following topics: history and uses of geometry, matrices and linear systems, Markov chains, game theory, sets and logic, scheduling, cryptography, or other topics approved by the Mathematics Division.

**Prerequisite:** MTH 095, MTH 098, or equivalent course with a grade of C- or better within the past two years, or placement test.

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### 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. These applications include at least three of the following topics: voting systems, methods of fair division, apportionment, networks, graph theory, or other topics approved by the Mathematics Division.

**Prerequisite:** MTH 095, MTH 098, or equivalent course with a grade of C- or better within the past two years, or placement test.

### Learning Outcomes

- Define the fairness criteria for elections and determine which of the criteria a given voting system satisfies.
- Determine the outcome of a weighted voting system.
- Explain the meaning and importance of fairness criteria for election methods.
- Determine whether or not a particular apportionment falls prey to the New State paradox, the Population paradox, or the Alabama paradox.
- Explain the meaning and importance of fairness criteria for election methods.
- Determine whether or not a division is fair or envy-free.
- Collaborate with group members to discuss and explain class concepts, solve application problems, and propose new problems and scenarios.
- Reflect on successes, failures, and obstacles encountered in the problem-solving process.
- Assess mistakes and rework solutions on certain assignments.
- Construct and organize solutions in appropriate ways; clarify and explain thought process and solution.
- Justify solutions with appropriate graphics, examples, and mathematical arguments.
- Determine the winner of an election using a variety of different voting methods.
- Determine if a coalition is a winning or losing coalition.
- Use Euler's theorem to determine if a given graph contains an Euler path or an Euler circuit.
- Determine which of the fairness criteria a voting method satisfies.
- Determine the outcome of a weighted voting system.
- Determine a modified quota and modified divisor, given the size of the population and the number of seats to be apportioned.
- Determine whether or not a particular apportionment satisfies the Quota rule.
- Compute the Banzhaf power index of a weighted voting system.
- Fairly divide a quantity using divide-and-choose methods for two, three, or more players.
- Fairly divide a collection of objects.
- Apportion seats using a variety of methods.
- Find the minimal spanning trees of a given graph.
- Find approximate solutions to the traveling merchant problem.

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### MTH 111 - College Algebra

5 Credit(s)

MTH 097 is strongly recommended. 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 or equivalent course within the past two years and with



a grade of C- or better, or placement test.

### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Maintain, use, and expand the skills and concepts learned in previous mathematics courses.
- Apply the midpoint formula, distance formula, properties of lines, and equations of circles to the solution of problems from coordinate geometry.
- 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.
- Use substitution to create an equation defining one quantity as a function of another.
- Apply principles of transformations (shifts, reflections, and stretches) to equations and graphs of functions.
- Recognize, sketch, and interpret the graphs of the basic functions without the use of a calculator.
- Identify and apply properties of polynomial functions.
- Identify and apply properties of rational functions with and without a calculator.
- Identify and apply properties of exponential and logarithmic expressions and functions.
- Analyze a function by interpreting its graph, using a graphing calculator.
- 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).
- Translate word problems into mathematical expressions, solve the problems, and interpret the solutions.
- Communicate ideas of college algebra through English statements and mathematical sentences.
- Use the language and skills of precalculus that are important for success in calculus.
- Write and evaluate the notation of sequences and series including  $n$ th terms, summations, and factorials.
- Solve nonlinear systems of equations algebraically and graphically (optional – time permitting).
- Identify sequences as arithmetic, geometric, or neither and apply appropriate formulas related to those sequences to solve problems (optional - time permitting).
- 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.

**Prerequisite:** MTH 111 or equivalent course with a grade of C- or better, or placement test. MTH 097 is strongly recommended prior to taking MTH 112.

### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Use geometry, algebra, and graphing calculator skills from previous courses.
- Move easily between degree and radian measure.
- Identify and use the six trigonometric functions in right triangle applications.
- Identify features of and use of the six circular functions.
- Graph the six circular functions and related transformations and extract features from their equations and graphs.
- Recall and apply the basic trigonometric identities.
- Use the sum, difference, double-angle, and half-angle identities.
- Identify features of and use the three major inverse trigonometric functions.
- Solve trigonometric equations analytically and with graphing technology.
- Apply the Law of Sines and Law of Cosines where appropriate.
- Use polar coordinates and polar equations and transform them to rectangular form and back.
- Use complex numbers in standard form and in polar form (time permitting).

- Solve problems using vector notation.
- Use parametric equations.
- Work with the definitions, equations, and graphs of conic sections.
- Apply geometric and trigonometric relationships to applied problems.
- Use a graphing calculator to graph equations and explore concepts for equations in rectangular, parametric, or polar form.

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### 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 or equivalent course with a grade of C- or better in the past two years, or placement test.

### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- 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.
- Recognize and apply patterns of numbers, objects or symbols in a variety of ways.
- Recognize and apply strategies to sequences such as arithmetic, geometric, or otherwise.
- 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.
- 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.
- 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.
- 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.

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### 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:

- Recognize and apply problem solving strategies to solve routine and non-routine problems.
- 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.

- 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.
- 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

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### 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:

- Recognize and apply problem solving strategies to solve routine and non-routine problems.
- 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.
- 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.
- Recognize and apply strategies for transformational geometry. Describe and apply the properties of symmetry, rotation, reflections, and translations. Apply size transformations correctly.
- 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

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### 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 or equivalent course with a grade of C- within the past two years, or placement test.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Use propositional calculus notation and techniques to determine the validity of logical statements and proofs.
- Write canonical expressions for truth functions.
- Methods to simplify Boolean expressions and logic networks.
- Translate Boolean expressions to and from logics networks.
- Use techniques of direct proofs and proofs by contradiction.
- Apply techniques of mathematical induction to proofs

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### MTH 232 - Discrete Mathematics 2

4 Credit(s)

Topics include functions, relations, Pigeon Hole principle, matrix representation of trees, 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:

- Apply notation and technique to functions, inverse functions and composition of functions.

- Apply recursion to sequences. Use recursive definitions. Use recursive in logical arguments.
- Use set theory in logical arguments and Boolean algebra.
- Determine if a given mathematical structure is a Boolean algebra.
- Prove elementary properties of Boolean algebras.
- Know the properties of relations on finite and infinite sets.
- Understand equivalence relations and equivalence classes.
- Use modular arithmetic.
- Differentiate between partial and total order relations.

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### 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 or equivalent course 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:

- Find limits for various functions and solve continuity problems.
- Solve rates of change applications.
- Find derivatives of single variable functions by definition and by rules.
- Differentiate logarithmic and exponential functions by rules.
- Solve exponential growth and decay problems, as time permits.
- 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.
- Solve maxima and minima application problems using calculus.
- Solve business problems using geometry and derivatives.
- Solve business applications of elasticity.
- Use implicit differentiation and related rates to solve graphing, geometry and business applications.
- Use graphing calculators to graph functions to check their calculus hand-work

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### 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:

- Find antiderivatives of single variable functions.
- Find indefinite integrals for functions combining polynomial, exponential, and logarithmic functions.
- Calculate definite integrals for polynomial, logarithmic, exponential functions.
- Apply integration techniques to find areas under and between curves.
- Apply integration techniques to find net changes of continuous functions.
- Find the average value of a function with integration.
- Find partial derivatives of functions of several variables.
- Find relative extrema for two variable functions.
- Find points for 3 D functions.
- Apply technique of Lagrange multipliers to maximize or minimize a function of several variables with a constraint.
- Apply the Hessian method to optimize functions of two variables.
- Use multiple integrals to evaluate volumes over rectangular areas and average values of functions of two variables

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### 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 courses 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:

- Classify data as categorical or quantitative.
- Construct frequency bar charts, histograms, boxplots, stemplots and scatterplots.
- Use descriptive statistics for center, location and spread.
- Demonstrate an understanding of probability experiments, outcomes and events.
- Recognize disjoint and independent events.
- Find and interpret theoretical and statistical probabilities, including compound and conditional probabilities.
- Find probabilities and values for a normal distribution.
- Find probabilities for uniform, binomial, and Poisson distributions
- Use the Central Limit Theorem to construct confidence intervals for population mean.
- Construct confidence intervals for population proportion.
- Test hypotheses about one or two population means.
- Test hypotheses about one or two population proportions.
- Interpret the correlation coefficient and its square.
- Create regression lines and test their statistical significance.
- Test the independence of two categorical variables using Chi-square.
- Demonstrate an understanding of sampling and basic research design.
- Demonstrate an understanding of sources of bias and error in statistical research.
- Use statistical software and the statistical features of a graphing calculator.

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### 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 or equivalent course with a grade of C- or better completed within the past five years, or placement test.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Understand the definition of the derivative as the limit of the difference quotient for a function.
- Be able to use the definition of the derivative to find derivatives of certain elementary functions.
- Find derivatives numerically utilizing technology.
- Visualize and interpret derivatives graphically.
- Understand and use the derivative of a function as a function in its own right.
- Understand the development and use of procedures for differentiating polynomial, exponential, logarithmic, and trigonometric functions, including the inverse sine & inverse tangent functions.
- Use the power, product, quotient, and chain rules to find derivatives of functions.
- Use the technique of implicit differentiation to find derivatives of implicitly defined functions.
- Find equations of tangent lines to the graphs of functions at specific points.
- 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.
- Use linear approximation to estimate function values.
- Use the methods and techniques of differential calculus to solve a variety of application problems, including optimization and related rate problems.
- Use a programmable graphing calculator as an effective tool in confirming analytical work and obtaining numerical and graphical results related to differential calculus.

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### MTH 252 - Calculus 2 (Integral Calculus)

5 Credit(s)

Specific topics include conceptual development of the definite integral, properties of the definite integral, the first and second Fundamental Theorems of Calculus, constructing anti-derivatives, 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:

- Estimate & calculate totals given information about rates of change
- Understand the definite integral as a limit of Riemann sums.
- Interpret the meaning of and use correct notation for a definite integral.
- Compute definite integrals using the first fundamental theorem of calculus.
- Understand how the definite integral and the average value of a function are related.
- Use properties and theorems pertaining to integrals.
- Graphically and numerically construct antiderivatives.
- Work with elementary differential equations.
- 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.
- Understand that the indefinite integral represents a family of antiderivative functions.
- Find definite & indefinite integrals using basic rules, the substitution method, integration by parts, and trigonometric substitution.
- Use the midpoint, trapezoid, and Simpson's rule to approximate definite integrals.
- Identify improper integrals that converge or diverge and compute their values where possible.
- Use the methods & techniques of integral calculus to solve a variety of application problems.
- Use a programmable graphing calculator as an effective tool in confirming analytical work and obtaining numerical and graphical results related to integral calculus

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### 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 and conics. 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:

- Use algebra, geometry, trigonometry, differential and integral calculus skills from prerequisite courses to solve math problems.
- 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.
- Use arithmetic and algebra for integration techniques including trig substitution and partial fractions.

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### 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 253 completed with a grade of C- or better within the past four terms.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Use algebra, geometry, trigonometry, differential and integral calculus skills from prerequisite courses to solve math problems.
- 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.
- Use arithmetic and algebra for calculating distances in space, and for



parametric equations of lines in space.

- 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.

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### 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:

- Use algebra, geometry, trigonometry, differential and integral calculus skills from prerequisite courses to solve math problems.
- 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.
- 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

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### MTH 256 - Applied Differential Equations

4 Credit(s)

This is the last of a six-term sequence. The course covers methods of solving ordinary differential equations and includes elementary methods, convergent power series and numerical methods, with applications to physical engineering science.

**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

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### MTH 260 - Linear Algebra

4 Credit(s)

This course provides a foundation of linear algebra computation, terminology and theory. Topics include systems of linear equations, vector spaces, matrices, determinants, theory of linear transformations, dot and cross products, eigenvalues, eigenvectors, and complex numbers.

**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.

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### 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 where MTH 261 & MTH 253 satisfy the MTH 306 requirement at OSU.

**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 5. Solve eigenvalue/eigenvector problems

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### 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

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## Medical Assisting

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### 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.

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### 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. May be offered online.

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### 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:** 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:

- Interpret basic coding rules and apply them when choosing a code for diagnosis and treatment.
- Assign codes to the highest level of specificity.
- Verbalize the benefits for the provider by participating in the VBP (Value Based Purchasing) Incentive program created by Centers for Medicare and Medicaid
- 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.

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### 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:

- Review the use of fifty (50) most common instruments used in the physician's office.
- 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.
- Explain the sizing standards of suture material and the criteria used to select the most appropriate type and size.
- Possess knowledge of terms used and demonstrate the use of dressings and bandages.
- Understand fundamentals of pharmacology and identification of medications (using the Physician's Desk Reference).
- Describe the parts of a prescription; discuss legal and ethical implications of medication administration.
- Define the law in terms of administering, prescribing and dispensing drugs.
- List the guidelines to follow when preparing and administering medications.
- Correctly spell and identify the Drug Category of the top 100 drugs prescribed in the USA.
- Identify injection sites, syringe identification, the proper drawing up of medications, and demonstrate injection technique on a simulator.
- 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.

- Understand fundamental principles and operation of ECG equipment.
- Demonstrate the skill of performing a diagnostic ECG on an Adult (student).
- Pass the final Dosage Computation test with a score of 90% or better.

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### 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:

- 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.
- Demonstrate professional attitudes and actions while assisting patients in the office setting.
- Demonstrate telephone professionalism and courtesy.
- Define the Triage phone call, and explain why accurate documentation in the medical record is important.
- Identify what is a crisis in a medical office and take proper action according to training and ability (First Aid, CPR, and 911 Communications).
- Identify the precautions used to avoid overexposure to radiation for self and the patient.
- List specific radiological examinations and the patient preparation instructions for each exam.
- Define rehabilitation medicine and explain its importance in patient care.
- Describe assistive devices and demonstrate the safety precautions/ techniques to use when assisting a patient.
- Describe the relationship of nutrition to the functions of the digestive system of the human body.
- Discuss nutrition for the various stages of life (from infant needs to geriatric needs).
- Identify various therapeutic diets and the importance to a particular disease.
- Demonstrate the competency as a clinical assistant in a physician's office (Co-op Education Evaluations).
- Complete and pass the final Dosage Computation test with a score of 90% or better.
- Present to the class a report on a selected Human Disease.
- Demonstrate Protective Practices

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### 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:

- Recognize the purpose of the clinical laboratory, as well as its departmental and personnel structure.
- Demonstrate a basic foundation in medical terminology, especially as it applies to the clinical laboratory.
- Explain some ethical and legal considerations for laboratory personnel.
- Define and state the critical importance of infection control in the ambulatory care setting and the physician's office lab (POL).
- Demonstrate a thorough knowledge of various safety issues in the laboratory and the healthcare environment.
- Explain the importance of CLIA and the regulations of testing in the POL.
- Describe and demonstrate the concepts of quality control and quality assurance in the POL.
- Dispose of specimens and equipment in accordance with federal, state and local guidelines.
- Explain the types of equipment used to obtain specimens from a patient.
- Demonstrate how to correctly complete a laboratory requisition.
- Explain the importance of correct patient identification, complete specimen labeling, and proper handling, storage and delivery of patient

specimens.

- Describe the hazards and complications of drawing blood.
- Explain and perform venipunctures on live patients using a vacutainer and a syringe.
- Instruct and demonstrate to a patient how to monitor their own blood glucose.
- Perform various CLIA waived lab tests in a manner acceptable for entry-level employment.
- List the most common lab profiles and explain the body system or function being surveyed.
- Identify abnormal or critical lab test results.
- Demonstrate the proper use and care of a compound microscope.
- Apply ethical standards and professionalism in the medical laboratory

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## Multimedia

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### 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. This course may be offered as a traditional, hybrid or online course.

#### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Know the breadth of the Media Arts program and the different aspects of each Media Arts area of study.
- Know the expectations and rigor of the Media Arts program.
- Know the culture and rigor of media arts production and creative Professionals.
- Locate and use college resources and understand college processes.
- Know the structures and processes of a collaborative production environment.
- Understand the importance of being proactive and being a problem solver in this program and industry.
- Demonstrate a basic knowledge of how to use a workstation in a production environment

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### 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, animation, interactive, live, and other time-based productions.

#### Learning Outcomes

Upon course completion, students will be able to:

- Create and analyze a diverse variety of expressed creative project content.
- Create a diversity of work using current software and hardware technologies that demonstrates understanding of theory and practice.
- Create a diversity of work using current software and hardware technologies.
- Define professional level production standards and evaluate course productions based on professional standards.

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### 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:

- Understand the mechanics, physics, and manual operation of DSLR cameras.
- Effectively select and use DSLR lenses, tripods, and simple lighting kits.
- Effectively organize and manage digital assets.
- Effectively plan and shoot a series of high resolution digital images.
- Be familiar with an array of digital hardware and software tools.
- Understand theories and aesthetics of contemporary image making.

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### 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:

- Summarize the history of animation; identify technological developments and explain how those advances shape form and content.
- Use and explain the terminology/vocabulary core to working in animation.
- Critically appraise the impact of animated media on culture.
- Demonstrate basic principles of animation, primarily: Squash and stretch, anticipation, staging, timing



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**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:** ART 222, ART 228 and ART 289**Corequisite:** ART 223, ART 229, ART 290**Learning Outcomes**

Upon successful completion of this course, students will be able to:

- Assess new design job (CLO 1.1)
- Determine customer's needs, ascertain and obtain all information and assets within timeline for deliverables. (CLO 1.2)
- Communicate project plan with client via Creative Brief for approval. (CLO 1.3)
- Discuss with co-workers and get feedback. (CLO 1.4)
- Acquire all copy and images, do research on subject, check all content for verification, copyright information and citation as needed. (CLO 1.5)
- Find design solutions and defend them, integrate other relevant points of view as needed for best outcome (CLO 1.6)
- Assess public interface of media created. Understand responsibility of being a media-maker. (CLO 2.1)
- Get multi-cultural viewpoints on advertising campaigns and graphic message. (CLO 2.2)
- Assess impact on a diverse community of consumers. (CLO 2.3)
- Work with others and experts as needed to vet messages and get proper feedback before going live on the web or to press. (CLO 2.5)
- Attempt multiple ideas to achieve communication goals of project. (CLO 3.2)
- Use computers and other resources to produce final product. (CLO 3.3)
- 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)

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**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:

- Break down a storyboard into sections that can be animated through motion capture.
- Work in a team based environment to prepare a short story to be brought to life through the animation process of motion capture.
- Demonstrate techniques of high fidelity animation through the use of markerless motion capture system.
- Express original ideas to developing a storyboard.
- Add, refine, question, and expand on existing ideas a way that respects others dissent.
- Critique fellow students work to identify problem areas and areas of success.
- Apply learned successful techniques to improve the group project and offer advice to fellow groups with problem areas.

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**MUL 210 - Multimedia Design**

3 Credit(s)

Students design and produce computer multimedia programs using digital production techniques in imaging, sound, and animation. Emphasis is on design implementation and human factors, user analysis, interface and interaction considerations, project management, and understanding client needs.

**Prerequisite:** MUL 105**Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Understand how the components of a slide/tape program fit together.
- Develop program objectives.
- Analyze an audience and assess their needs.

- Do research.
- Write a script and a treatment.
- Estimate production expenses.
- Determine effectiveness visuals.
- Produce an audio tape.
- Identify the elements of an effective presentation

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**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:

- Identify digital camera performance (criteria)
- Demonstrate digital camera controls
- Know digital terminology: file formats, etc.
- Identify digital workflow stages and elements
- Demonstrate basic digital editing techniques
- Demonstrate digital editing software use.

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**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. May be offered as a traditional, fully online or hybrid course.

**Learning Outcomes**

Upon successful completion of this course, the student will:

- Be able to establish an organized and efficient workflow within an organization
- Be able to lead client discussions which will allow strategic planning of marketing materials
- Demonstrate mastery of project management, including timelines, budgets
- Demonstrate a basic knowledge of standard business practices relating specifically to the media arts industry
- Demonstrate a basic knowledge of responsibilities of designers and clients and how to resolve problems when they occur
- Develop the basic skills and resources for job searching
- Establish and organize an efficient workflow for a freelance business
- Lead client discussions which will allow strategic planning of projects
- Recognize and deal with ethical issues, such as privacy, confidentiality, conflict of interest, offensive content, and stereotypes as they relate to the media industry.
- Demonstrate an understanding of making ethical choices when using outside sources

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**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 as well as through the invisibility of well chosen body type. Type hierarchy and grid systems will be explored in order to provide graphic design students with organizational layout skills commensurate with what is needed as a design professional. Communication of other information, i.e., data, graphs and tables will also be considered. The etiquette of whole page and multi-page document layout will also be taught. Students will perform a series of projects to demonstrate skill 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

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#### 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:

- Utilize advanced digital sculpting tools and sculpt layers within the software package
- Produce high end texture maps from digital sculpt projects for use in game engines and other external animation programs
- Use critical thinking to analyze anatomically correct structures and to apply that knowledge to fictional character sculptures.
- Apply and build upon learned skills from previous projects to produce an elevated end product.

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#### 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:

- Demonstrate proficiency utilizing digital art technology: digital tablets, cintiq tablets, digital painting software and applications.
- Demonstrate and explain professional digital workflow: Concept development, integration of analog and digital processes, output to print and digital platforms.
- Develop and apply critical and creative problem solving processes: Defining the problem (creative and technical), exploring solutions, assessing results.
- Demonstrate the ability to flexibly explore expressive possibilities using a variety of digital painting applications and techniques

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#### 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 only wish to better understand and appreciate graphic design as well as those who are interested in graphic design careers. This class is required for the graphic design degree at Lane.

##### Learning Outcomes

Upon successful completion of this course, students will be able to:

- use the appropriate vocabulary to articulate an understanding, in both historical and current contexts, of the definition of Graphic Design.
- use the appropriate vocabulary to articulate an understanding of the roots and shoots of the western design sensibility in historical and current contexts.
- 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.
- 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.
- 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.
- 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.

- 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.
- 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.
- 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

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## Multimedia Production

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#### 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, VP 151, AUD 120 and MUL 210

##### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Use their skills and knowledge as positive contributions to team production efforts.
- Relate the concepts of production design to the communication needs being addressed by a production.
- Demonstrate an understanding of applying basic visual treatments appropriately to media productions.
- Participate as a production team member in meeting time deadlines and professional production values required by productions scheduled for public distribution.
- Practice specialized individual production skills which will meet media workforce standards.
- Discuss current media production technologies and issues.

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#### 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, VP 152, MUL 212

##### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Use their skills and knowledge as positive contributions to team production efforts.
- Relate the concepts of production design to the communication needs being addressed by a production.
- Demonstrate an understanding of applying basic visual treatments appropriately to media productions.
- Participate as a production team member in meeting time deadlines and professional production values required by productions scheduled for public distribution.
- Practice specialized individual production skills which will meet media workforce standards.
- Discuss current media production technologies and issues.

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#### MDP 248 - Multimedia Production 3

4 Credit(s)

A practicum course that gives 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 may be able to volunteer for production positions based on their own career interests and experience. A component of the course will permit the introduction of current topics such as media issues, professional production techniques, changing media technology, and job market information.

**Prerequisite:** MDP 247

##### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Use their skills and knowledge as positive contributions to team production efforts.

- Relate the concepts of production design to the communication needs being addressed by a production.
- Demonstrate an understanding of applying basic visual treatments appropriately to media productions.
- Participate as a production team member in meeting time deadlines and professional production values required by productions scheduled for public distribution.
- Practice specialized individual production skills which will meet media workforce standards.
- Discuss current media production technologies and issues.

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## Music

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### 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. Students may find it helpful to take Group Piano MUS 131 or Group Guitar MUS 137 concurrently. This course prepares one for MUS 111 - Music Theory 1 (First Term). May be offered online.

#### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Identify and demonstrate knowledge of fundamental elements of music theory in treble and bass clef including pitches, key signatures, and time signatures. (CLO 1.3, 1.5, 5.2)
- Demonstrate ability to read and notate simple rhythms. (CLO 4.2, 5.1)
- Identify and demonstrate knowledge of scales, triads, seventh chords, and simple chord progressions. (CLO 3.1, 5.2)

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### MUS 103 - Songwriting 1

3 Credit(s)

Songwriting Techniques and Analysis is a class for students to explore 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 should be able to:

- Develop a concept for artistic and well-crafted songs including melodies, lyrics, chords, and form. (CLO 1.2, 1.5, 4.2, 4.3)
- Demonstrate ability to read and create lead sheets for songs. (CLO 1.5, 4.3, 5.1)
- Develop an ethical and aesthetic awareness for one's songwriting process. (CLO 2.1, 2.2, 3.6)
- Demonstrate ability to communicate ideas about songwriting using appropriate terminology. (CLO 2.3, 3.1, 4.2, 5.4)

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### MUS 107 - Audio Engineering 1

3 Credit(s)

Audio Engineering is available for students who are seeking the tools to work and function as a recording engineer in a recording environment i.e., recording studio or live concert recording. Students will meet with the instructor in the recording studio where the following topics, among others, will be addressed and demonstrated: sound and hearing, studio acoustics, microphones choices 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:

- Demonstrate knowledge of the vocabulary and concepts of Audio Engineering at a basic level. (CLO 1.1, 3.3)
- Demonstrate knowledge of acoustics and human hearing at a basic level. (CLO 1.3, 5.3)
- Demonstrate knowledge and practical use of audio equipment, microphones, computers and file management as relates to the course at a basic level. (CLO 3.1, 3.3, 5.2)
- Demonstrate knowledge of mixing techniques, session procedures and work flow at a basic level. (CLO 4.2, 4.4, 5.2, 5.3)

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### MUS 109 - Audio Engineering 2

4 Credit(s)

This course is available for students who are seeking the tools to work and function as recording engineers in a recording environment (recording studio or live concert recording). Students will meet with the instructor in the recording studio where the following topics, among others, will be addressed and demonstrated, and hands-on assignments, using the recording studio equipment, will begin taking place: operation of outboard mic pre amps 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, tracking to different mediums, etc.

**Prerequisite:** MUS 107

#### Learning Outcomes

Upon successful completion of the course, students should be able to:

- Demonstrate knowledge of the vocabulary and concepts of Audio Engineering at an intermediate level. (CLO 1.1, 3.3)
- Demonstrate knowledge of acoustics and human hearing at an intermediate level. (CLO 1.3, 5.3)
- Demonstrate knowledge and practical use of audio equipment, microphones, computers and file management as relates to the course at an intermediate level. (CLO 3.1, 3.3, 5.2)
- Demonstrate application of mixing techniques, session procedures and work flow at an intermediate level. (CLO 4.2, 4.4, 5.2, 5.3)

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### MUS 110 - Audio Engineering 3

4 Credit(s)

Audio Engineering 3 is the third course in the Audio Engineering sequence, which is 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. The following topics, among others, will be addressed and demonstrated as students work on a large-scale recording project: 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:

- Demonstrate knowledge and practical use of audio equipment, microphones, computers and file management as relates to the course at an advanced level. (CLO 3.1, 3.3, 5.2, 5.4)
- Demonstrate application of mixing techniques, session procedures and work flow at an advanced level. (CLO 5.3, 5.4)
- Demonstrate an ability to work cooperatively and efficiently as part of a professional level audio production team. (CLO 2.4, 2.5, 4.5)
- Demonstrate knowledge and application of mastering techniques at a basic level. (CLO 1.5, 5.1, 5.3)

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### MUS 111 - Music Theory 1 (First Term)

4 Credit(s)

MUS 111, 112, 113 must be taken in sequence. Thorough review of the fundamentals of music followed by their application to melody, harmony, and rhythm through analysis and composition. Emphasis of MUS 111 is 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. This course is designed to be taken with MUS 114 and MUS 127 concurrently.

**Prerequisite:** Theory placement test required.

#### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Identify and demonstrate knowledge of essential elements of music theory. (CLO 1.3, 3.1, 5.2)
- Realize chords from a given figured bass for simple harmonic progressions at a basic level. (CLO 5.2)
- Evaluate musical performances using appropriate terminology that relates to the class. (CLO 1.5, 4.4)
- Compose original music and have it performed in class. (CLO 1.1, 2.5, 3.1, 3.4, 4.2, 5.3)

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### MUS 112 - Music Theory 1 (Second Term)

4 Credit(s)

Must be taken in sequence. Emphasis of MUS112 is on tonal species counter point and tonal music in 4 part context. Includes tonal functional harmony involving tonic and dominant harmonies, non-harmonic tones, scoring, figured bass and introduction of cadences. This course is designed to be taken with MUS 115 and MUS 128 concurrently.



**Prerequisite:** MUS 111

**Learning Outcomes**

Upon successful completion of this course, students should be able to:

- Demonstrate and apply knowledge of essential elements of music theory through part writing and analysis at a basic level. (CLO 1.3, 3.4, 5.2)
- Realize chords from a given figured bass for simple harmonic progressions at an intermediate level. (5.2)
- Evaluate musical performances using appropriate terminology that relates to the class. (CLO 1.5, 4.4)
- Compose original music and have it performed in class. (CLO 1.1, 2.5, 3.1, 3.4, 4.2, 5.3)
- Compose and analyze 1st - 5th species counterpoint. (CLO 1.2, 3.4, 4.2, 5.3)

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**MUS 113 - Music Theory 1 (Third Term)**

4 Credit(s)

Must be taken in sequence. Emphasis of MUS 113 is in concepts of prolongation and contextual analysis. Includes all diatonic chords, cadences, embellishing chords, melodic analysis, sequences, and secondary dominants. This course is designed to be taken with MUS 116 and MUS 129 concurrently.

**Prerequisite:** MUS 112

**Learning Outcomes**

Upon successful completion of this course, students should be able to:

- Demonstrate and apply knowledge of basic elements of music theory through part writing and analysis at an intermediate level. (CLO 1.3, 3.4, 5.2)
- Realize chords from a given figured bass for simple harmonic progressions at an advanced level. (CLO 5.2)
- Evaluate musical performances using appropriate terminology that relates to the class. (CLO 1.5, 4.4)
- Compose original music and have it performed in class. (CLO 1.1, 2.5, 3.1, 3.4, 4.2, 5.3)
- Identify formal structures in music through listening and analysis. (CLO 1.1, 1.5, 3.1, 4.4, 5.2)

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**MUS 114 - Sight-reading and Ear Training (First Term)**

2 Credit(s)

In this three term sequence of courses, one 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. This course is designed to be taken with MUS 111 and MUS 127 concurrently.

**Prerequisite:** Theory placement test required.

**Learning Outcomes**

Upon successful completion of this course, students should be able to:

- Demonstrate singing skills with accuracy for notes, scales, rhythms, and melodies at a basic level. (CLO 1.3, 1.5, 5.3)
- Demonstrate singing skills with accuracy for simple rhythmic and melodic duets at a basic level. (CLO 3.2)
- Notate rhythms, melodies, and simple harmonic progressions with accuracy at a basic level. (CLO 1.3, 3.5, 5.2)
- Conduct basic patterns to facilitate learning rhythms and melodies in course. (CLO 4.2)
- Identify, sing, and dictate intervals and chords at a basic level. (CLO 1.1)
- Identify and dictate simple diatonic progressions with accuracy at a basic level. (CLO 5.3)

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**MUS 115 - Sight-reading and Ear Training (Second Term)**

2 Credit(s)

In this second of the three term sequence, the course solidifies the singing and listening skills that focuses on tonic and dominant chords. It 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

**Learning Outcomes**

Upon successful completion of this course, students should be able to:

- Demonstrate singing skills with accuracy for notes, scales, rhythms, and melodies at an intermediate level. (CLO 1.3, 1.5, 5.3)
- Demonstrate singing skills with accuracy for simple rhythmic and melodic duets at an intermediate level. (CLO 3.2)
- Notate rhythms, melodies, and simple harmonic progressions with accuracy at an intermediate level. (CLO 1.3, 3.5, 5.2)
- Conduct basic patterns to facilitate learning rhythms and melodies in course. (CLO 4.2)

- Identify, sing, and dictate intervals and chords at an intermediate level. (1.1)
- Identify and dictate simple diatonic progressions with accuracy at an intermediate level. (CLO 5.2, 5.3)

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**MUS 116 - Sight-reading and Ear Training (Third Term)**

2 Credit(s)

Emphasis of MUS 116 is on exercises using all diatonic chords, complex rhythmic subdivisions, sequences, and non-chord tones. Basic understanding of secondary dominant chords is introduced. This course is to be designed to be taken with MUS 113 and MUS 129 concurrently.

**Prerequisite:** MUS 115

**Learning Outcomes**

Upon successful completion of this course, students should be able to:

- Demonstrate singing skills with accuracy for notes, scales, rhythms, and melodies at an upper intermediate level. (CLO 1.3, 1.5, 1.6, 5.3)
- Demonstrate singing skills with accuracy for simple rhythmic and melodic duets at an upper intermediate level. (CLO 2.5, 3.2)
- Notate rhythms, melodies, and simple harmonic progressions with accuracy at an upper intermediate level. (CLO 1.3, 3.5, 5.2)
- Conduct basic patterns to facilitate learning rhythms and melodies in course. (CLO 4.2)
- Identify, sing, and dictate intervals and chords at an upper intermediate level. (CLO 1.1)
- Identify and dictate simple diatonic progressions with accuracy at an upper intermediate level. (CLO 5.2, 5.3)

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**MUS 118 - Music Technology MIDI/Audio 1**

4 Credit(s)

This course provides the student with an opportunity, through group instruction and hands-on experience, to study current applications of music technology in a comprehensive MIDI/audio studio. Students will learn to use various music production tools, using 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:

- Demonstrate basic knowledge of MIDI and its use in an electronic music studio. (CLO 1.3, 3.3)
- Demonstrate basic knowledge of the physics of sound. (CLO 1.2)
- Demonstrate basic knowledge of microphone use and signal routing. (CLO 1.2, 3.3)
- Develop basic skills in use of DAWs and MIDI hardware through creative projects. (CLO 4.2, 4.3)

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**MUS 119 - Music Technology MIDI/Audio 2**

4 Credit(s)

This course provides the student with an opportunity, through group instruction and hands-on experience, to study advanced techniques in the field 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, digital mixing, and mastering. In addition, 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:

- Demonstrate intermediate knowledge of MIDI and its use in an electronic music studio. (CLO 1.3, 3.3)
- Demonstrate intermediate knowledge of microphone use and signal routing. (CLO 1.2, 3.3)
- Develop intermediate skills in use of DAWs and MIDI hardware through creative projects. (CLO 4.2, 4.3, 5.4)
- Demonstrate basic knowledge and practical use of MIDI and audio post-production for use with video. (CLO 5.2, 5.3, 5.4)

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**MUS 127 - Keyboard Skills 1 (First Term)**

2 Credit(s)

This course is the first of a three-term sequence. It is designed to develop 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. This course is designed to be taken with MUS111 and MUS114 concurrently.

**Prerequisite:** Theory placement test required.

#### Learning Outcomes

Upon successful completion of the course, students will be able to:

- Demonstrate keyboarding skills with accuracy for notes, rhythms, scales, arpeggios and simple chord progressions including cadences at a basic level. (CLO 1.2, 5.2, 5.3)
- Demonstrate correct voice leading and resolution, harmonization, transposition, and improvisation at a basic level. (CLO 1.3, 1.5, 3.1, 5.1)
- Sight read a simple 2 part piano texture at a basic level. (CLO 1.1, 1.2)

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#### MUS 128 - Keyboard Skills 1 (Second Term)

2 Credit(s)

This course is the second of a three-term sequence. It is designed to develop 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. This course is designed to be taken with MUS 112 and MUS 115 concurrently.

**Prerequisite:** MUS 127

#### Learning Outcomes

Upon successful completion of the course, students will be able to:

- Demonstrate keyboarding skills with accuracy for notes, rhythms, scales, arpeggios and simple chord progressions including cadences at an intermediate level. (CLO 1.2, 5.2, 5.3)
- Demonstrate correct voice leading and resolution, harmonization, transposition, and improvisation at an intermediate level. (CLO 1.3, 1.5, 3.1, 5.1)
- Demonstrate realization of simple figured bass and lead sheet notation at a basic level. (CLO 1.2, 1.5, 3.1, 5.3)
- Sight read a simple 2 part piano texture at an intermediate level. (CLO 1.1, 1.2)

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#### MUS 129 - Keyboard Skills 1 (Third Term)

2 Credit(s)

This course is the third of a three-term sequence. It is designed to develop 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. This course is designed to be taken with MUS 113 and MUS 116 concurrently.

**Prerequisite:** MUS 128

#### Learning Outcomes

Upon successful completion of the course, students should be able to:

- Demonstrate keyboarding skills with accuracy for notes, rhythms, scales, arpeggios and simple chord progressions including cadences at an upper intermediate level. (CLO 1.2, 5.2, 5.3)
- Demonstrate correct voice leading and resolution, harmonization, transposition, and improvisation at an upper intermediate level. (CLO 1.3, 1.5, 3.1, 5.1)
- Demonstrate realization of simple figured bass and lead sheet notation at an intermediate level. (CLO 1.2, 1.5, 3.1, 5.3)
- Sight read a simple 2 part piano texture at an upper intermediate level. (CLO 1.1, 1.2)

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#### MUS 131 - Group Piano

2 Credit(s)

This course is for students who are not music majors who 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:

- Demonstrate ability to read and play piano music of difficulty appropriate to skill level. (CLO 1.3, 3.5, 4.2, 5.3)
- Demonstrate facility with simple scale patterns and chords using proper fingering and technique. (CLO 5.1)
- Demonstrate transposition and improvisational skills at a basic level (CLO 5.2)

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#### 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:

- Demonstrate improved ability with vocal technique including control of pitch, color/texture, volume, expanded range, and control of air to the vocal line. (CLO 1.2, 3.1, 4.2)
- Demonstrate understanding of repertoire preparation, lyric diction, and character development and how these apply to performance. (CLO 1.3, 1.4, 2.1)
- Demonstrate an expanded musical and stylistic awareness of vocal repertoire and an improved concentration/control in performance. (CLO 1.2, 4.4, 5.2)
- Demonstrate ability to critically evaluate their singing and apply learning towards making improvements in music making. (CLO 3.5, 3.6, 4.6, 5.4)

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#### MUS 137 - Group Guitar

2 Credit(s)

The student must have access to an acoustical guitar. Group Guitar provides a 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. May be repeated up to 6 total credits.

#### Learning Outcomes

Upon successful completion of this course, students should be able to:

- Demonstrate familiarity with guitar terminology and maintenance. (CLO 4.5)
- Demonstrate ability to read guitar notation and play music of difficulty appropriate to skill level. (CLO 1.3, 3.5, 4.2, 5.3)
- Demonstrate left hand and right hand guitar technique including chording skills, lead line playing, strumming and arpeggio patterns. (CLO 1.2, 1.3)
- Demonstrate a working knowledge of transposition, chord identification, and chord progression at a basic level. (CLO 5.1, 5.2, 5.3)

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#### MUS 138 - Group Guitar 2

2 Credit(s)

Group Guitar will involve an 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 will be covered. 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:

- Demonstrate familiarity with guitar terminology and maintenance. (CLO 4.5)
- Demonstrate ability to read guitar notation and play music of difficulty appropriate to skill level. (CLO 1.3, 3.5, 4.2, 5.3)
- Demonstrate left hand and right hand guitar technique including chording skills, lead line playing, strumming and arpeggio patterns. (CLO 1.2, 1.3)
- Demonstrate a working knowledge of transposition, chord identification, and chord progression at an intermediate level. (CLO 5.1, 5.2, 5.3)

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#### 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:

- Demonstrate knowledge of form, style, chord changes and related scales of music studied. (CLO 1.1, 1.3, 5.1, 5.2)
- Demonstrate improvement in the following: aural skills, phrase development, knowledge of chord structure, chord progression recognition, instrumental technique, and rhythmic control. (CLO 3.1, 3.2,

5.1, 5.2)

- Demonstrate a knowledge of jazz artists and jazz standards studied (CLO 1.2, 2.3, 4.4)

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### 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. First course in sequence. Course can be taken out of sequence.

#### Learning Outcomes

Upon successful completion of this course, students should be able to:

- Demonstrate knowledge of the basic elements of music as well as melody, harmony, rhythm, tempo, dynamics, texture, and orchestration. (CLO 1.5)
- Demonstrate knowledge of major composers, musical styles, and repertoire from the Medieval, Renaissance, and Baroque periods. (CLO 2.3, 3.1)
- Demonstrate knowledge of the outside influences on composers studied in course. (CLO 4.4)
- Clarify and express personal perspectives with regard to course content. (CLO 1.6, 4.6, 5.4)

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### 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. Second course in sequence. Course can be taken out of sequence.

#### Learning Outcomes

Upon successful completion of this course, students should be able to:

- Demonstrate knowledge of the basic elements of music as well as melody, harmony, rhythm, tempo, dynamics, texture and orchestration. (CLO 1.5)
- Demonstrate knowledge of major composers, musical styles, and repertoire from the Classical and Romantic periods. (CLO 2.3, 3.1)
- Demonstrate knowledge of the outside influences on composers studied in course. (CLO 4.4)
- Clarify and express personal perspectives with regard to course content. (CLO 1.6, 4.6, 5.4)

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### 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. Third course in sequence. Course can be taken out of sequence.

#### Learning Outcomes

Upon successful completion of this course, students should be able to:

- Demonstrate knowledge of the basic elements of music as well as melody, harmony, rhythm, tempo, dynamics, texture and orchestration. (CLO 1.5)
- Demonstrate knowledge of major composers, musical styles, and repertoire from the late Romantic period, Twentieth Century, and Twenty-first Century. (CLO 2.3, 3.1)
- Demonstrate knowledge of the outside influences on composers studied in course. (CLO 4.4)
- Clarify and express personal perspectives with regard to course content. (CLO 1.6, 4.6, 5.4)

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### 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:

- Demonstrate knowledge of essential elements of jazz performance (CLO 1.5)
- Demonstrate ability to discuss and critique recorded and "live" jazz performances (CLO 2.1, 2.2, 5.4)
- Demonstrate knowledge of the main style-periods of jazz history and the contributions of the most important innovators of jazz (CLO 2.3, 3.1, 4.4)
- Demonstrate knowledge of the roles of African American culture in jazz. (CLO 2.3)

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### MUS 211 - Music Theory 2: (First Term)

3 Credit(s)

This three-term sequence is a continuation of Music Theory I (MUS111, 112, 113) with further studies of compositional techniques in tonal harmony. Emphasis of MUS 211 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

#### Learning Outcomes

Upon successful completion of this course, students should be able to:

- Demonstrate and apply knowledge of complex elements of music theory through part writing and analysis at a basic level. (CLO 1.3, 3.4, 5.2)
- Realize chords from a given figured bass for complex harmonic progressions at a basic level. (CLO 5.2)
- Analyze the form and structure of music involving chromatic harmony through listening and analysis. (CLO 1.1, 1.5, 3.1, 4.4, 5.2)

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### MUS 212 - Music Theory 2 (Second Term)

3 Credit(s)

Continuation of MUS 211, with chromatic elaboration and enharmonic modulation using fully diminished seventh chords, augmented 6ths and Mm 7ths. Emphasis of MUS 212 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

#### Learning Outcomes

Upon successful completion of this course, students should be able to:

- Demonstrate and apply knowledge of complex elements of music theory through part writing and analysis at an intermediate level. (CLO 1.3, 3.4, 5.2)
- Realize chords from a given figured bass for complex harmonic progressions at an intermediate level. (CLO 5.2)
- Analyze the form and structure of music involving chromatic harmony through listening and analysis. (CLO 1.1, 1.5, 3.1, 4.4, 5.2)

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### 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. Designed to be taken with MUS 216 and MUS 226 concurrently.

**Prerequisite:** MUS 212

#### Learning Outcomes

Upon successful completion of this course, students should be able to:

- Demonstrate and apply knowledge of complex elements of music theory through part writing and analysis at an advanced level. (CLO 1.3, 3.4, 5.2)
- Realize chords from a given figured bass for complex harmonic progressions at an advanced level. (CLO 5.2)
- Analyze the form and structure of music involving chromatic harmony through listening and analysis. (CLO 1.1, 1.5, 3.1, 4.4, 5.2)
- Analyze the form and structure of non tonal and atonal music. (CLO 1.1, 1.5, 3.1, 4.4, 5.2)

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### MUS 214 - Keyboard Skills 2 (First Term)

2 Credit(s)

This course is the first of a three-term sequence. It is designed to develop 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 224 concurrently.

**Prerequisite:** MUS 113, MUS 116, and MUS 129

#### Learning Outcomes

Upon successful completion of the course, students should be able to:



- Demonstrate keyboarding skills with accuracy for all major and minor scales using both hands together. (CLO 1.2, 5.2, 5.3)
- 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)
- 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)

This course is part of a six-term sequence. It is designed to develop 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

#### Learning Outcomes

Upon successful completion of the course, students should be able to:

- Demonstrate keyboarding skills with accuracy for all major and minor scales and arpeggios using both hands together. (CLO 1.2, 5.2, 5.3)
- Demonstrate correct voice leading and resolution, harmonization, and use of a variety of cadences in complex chord progressions that modulate at an intermediate level. (CLO 1.3, 1.5, 3.1, 5.1)
- Demonstrate realization of complex figured bass and lead sheet notation at an intermediate level. (CLO 1.2, 1.5, 3.1, 5.3)

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### MUS 216 - Keyboard Skills 2 (Third Term)

2 Credit(s)

This course is the third in a three-term sequence. It is designed to develop 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 226.

**Prerequisite:** MUS 215

#### Learning Outcomes

Upon successful completion of the course, students should be able to:

- Demonstrate keyboarding skills with accuracy for modal and symmetrical scales. (CLO 1.2, 5.2, 5.3)
- Demonstrate correct voice leading and resolution, harmonization, and use of a variety of cadences in complex chord progressions that modulate at an advanced level. (CLO 1.3, 1.5, 3.1, 5.1)
- Demonstrate realization of complex figured bass and lead sheet notation at an advanced level. (CLO 1.2, 1.5, 3.1, 5.3)
- Demonstrate ability to perform piano repertoire relevant to course curriculum at a basic level. (CLO 1.1, 1.2)
- Demonstrate ability to accompany melodies/songs in various keys at a basic level. (CLO 1.1, 1.2, 1.5)

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### MUS 224 - Sight-reading and Ear Training (First Term)

2 Credit(s)

This is the first of a three-term sequence. MUS 224 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. This course is designed to be taken with MUS 211 and MUS 214 concurrently.

**Prerequisite:** MUS 113, MUS 116, MUS 129.

#### Learning Outcomes

Upon successful completion of this course, students should be able to:

- Demonstrate singing skills with accuracy for complex rhythmic and chromatic melodic material at a basic level. (CLO 1.3, 1.5, 5.3)
- Demonstrate singing skills with accuracy for complex rhythmic and melodic duets at a basic level. (CLO 3.2)
- Notate complex rhythms, melodies, and chromatic harmonic progressions with accuracy at a basic level. (CLO 1.3, 3.5, 5.2)
- Conduct basic patterns to facilitate learning complex rhythms and melodies in course. (CLO 4.2)
- Identify and sing intervals and chromatic chords with accuracy at a basic level. (CLO 1.1)
- Identify and dictate chromatic diatonic progressions with accuracy at a basic level. (CLO 5.2, 5.3)

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### MUS 225 - Sight-reading and Ear Training (Second Term)

2 Credit(s)

This is the second of a three-term sequence. This course continues to solidify an understanding of secondary dominant harmonies while teaching students how to begin to identify various compositional forms by ear. Student 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. This course is designed to be taken with MUS 212 and MUS 215 concurrently.

**Prerequisite:** MUS 224.

#### Learning Outcomes

Upon successful completion of this course, students should be able to:

- Demonstrate singing skills with accuracy for complex rhythmic and chromatic melodic material at an intermediate level. (CLO 1.3, 1.5, 5.3)
- Demonstrate singing skills with accuracy for complex rhythmic and melodic duets at an intermediate level. (CLO 3.2)
- Notate complex rhythms, melodies, and chromatic harmonic progressions with accuracy at an intermediate level. (CLO 1.3, 3.5, 5.2)
- Conduct basic patterns to facilitate learning complex rhythms and melodies in course. (CLO 4.2)
- Identify and sing intervals and chromatic chords with accuracy at an intermediate level. (CLO 1.1)
- Identify and dictate chromatic diatonic progressions with accuracy at an intermediate level. (CLO 5.2, 5.3)
- Identify formal structures in music through listening and analysis. (CLO 1.1, 3.4, 5.2, 5.3)

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### MUS 226 - Sight-reading and Ear Training (Third Term)

2 Credit(s)

This is the third of a three-term sequence. MUS 226 encapsulates the students' understanding of both tonal and chromatic harmony, and focuses on the concept of remote modulation. In addition, it introduces strategies for singing and hearing atonal and modal music. This course is designed to be taken with MUS 213 and MUS 216 concurrently.

**Prerequisite:** MUS 225.

#### Learning Outcomes

Upon successful completion of this course, students should be able to:

- Demonstrate singing skills with accuracy for complex rhythmic and chromatic melodic material at an advanced level. (CLO 1.3, 1.5, 5.3)
- Demonstrate singing skills with accuracy for complex rhythmic and melodic duets at an advanced level. (CLO 3.2)
- Notate complex rhythms, melodies, and chromatic harmonic progressions with accuracy at an advanced level. (CLO 1.3, 3.5, 5.2)
- Conduct basic patterns to facilitate learning complex rhythms and melodies in course. (CLO 4.2)
- Identify and sing intervals and chromatic chords with accuracy at an advanced level. (CLO 1.1)
- Identify and dictate chromatic diatonic progressions with accuracy at an advanced level. (CLO 5.2, 5.3)
- Demonstrate dictation and singing skills with accuracy for atonal melodies. (CLO 3.1, 5.2)
- Synthesize accumulative knowledge from previous terms in analysis and application of course content. (CLO 1.2, 4.1, 4.2, 4.4, 5.2)

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### MUS 260 - History of Hip-Hop and Rap music

3 Credit(s)

This course is designed to provide the student with an opportunity to explore 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:

- Demonstrate ability to identify rap music and its subgenres by stylistic traits and key contributions of most significant hip-hop and rap artists. (CLO 1.1, 4.4)

- 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. (CLO 2.3, 5.4)
- Identify, evaluate and study the roles of African American culture in hip-hop and rap music. (CLO 2.3)
- Describe the impact of hip-hop culture and rap music on individuals, local communities, the United States and the world as a whole. (CLO 2.3, 3.1, 4.4)

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#### **MUS 264 - Roots of Rock (Roots-1963)**

4 Credit(s)

This course is designed to provide the student with an opportunity to explore 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. May be offered online.

##### **Learning Outcomes**

Upon successful completion of this course, students should be able to:

- Demonstrate knowledge of essential elements of rock performance. (CLO 1.5, 1.6)
- Demonstrate ability to discuss and critique recorded and "live" rock performances. (CLO 2.1, 2.2, 5.4)
- Demonstrate knowledge of the main styles of Early Rock (Roots - 1963) and the contributions of the most important innovators of Early Rock. (CLO 2.3, 3.1, 4.4)
- Demonstrate knowledge of the role of the music industry in early rock. (CLO 2.3)
- Demonstrate knowledge of social and cultural events concurrent with the history of Rock music. (CLO 2.3, 4.4, 5.4)

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#### **MUS 265 - Golden Age of Rock & Roll (1964-1974)**

4 Credit(s)

This course is designed to provide the student with an opportunity to explore the musical, social and cultural aspects of Rock music from its pre-Rock influences and its development through 1964 -1975, while learning about important artists in this style. May be offered online.

##### **Learning Outcomes**

Upon successful completion of this course, students should be able to:

- Demonstrate knowledge of essential elements of rock performance. (CLO 1.5, 1.6)
- Demonstrate ability to discuss and critique recorded and "live" rock performances. (CLO 2.1, 2.2, 5.4)
- 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. (CLO 2.3, 3.1, 4.4)
- Demonstrate knowledge of the changes within the music industry during the Golden Age of Rock. (CLO 2.3)
- Demonstrate knowledge of social and cultural events concurrent with the history of Rock music. (CLO 2.3, 4.4, 5.4)

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#### **MUS 266 - Rockin' the New Millennium (1974-2006)**

4 Credit(s)

This course is designed to provide an opportunity to explore the musical, social and cultural aspects of rock music from c. 1974 through 2006, while learning about important artists in this style. May be offered online.

##### **Learning Outcomes**

Upon successful completion of the course, students will be able to:

- Demonstrate knowledge of essential elements of rock performance. (CLO 1.5, 1.6)
- Demonstrate ability to discuss and critique recorded and "live" rock performances. (CLO 2.1, 2.2, 5.4)
- 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 (CLO 2.3, 3.1, 4.4)
- Demonstrate knowledge of the mass media in Modern/Post Modern rock music. (CLO 2.3)
- Demonstrate knowledge of social and cultural events concurrent with the history of Rock music. (CLO 2.3, 4.4, 5.4)

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#### **MUS 268 - History of Electronic Music**

3 Credit(s)

This course will provide 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 liveperformance. 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:

- Demonstrate ability to identify major composers, compositions, and styles in the field of electronic music. (CLO 1.1, 1.2, 1.6)
- 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. (CLO 1.1, 1.3, 1.5, 2.1, 2.2, 4.6)
- Demonstrate knowledge of the role electronic music plays in other media. (CLO 1.3, 1.6, 2.4, 3.1, 4.6)

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#### **MUS 290 - Gospel Choir**

2 Credit(s)

Gospel choir provides a performance opportunity for the student who does not read music. The ensemble will primarily explore traditional African-American sacred music from the early spirituals to today's contemporary gospel sound. Emphasis will be placed on both group and personal expression which historically characterized the wellsprings of this music, which is native to the United States. No audition required; open to all Lane students. 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:

- Place each musical selection into the following African-American sacred music categories: spirituals, anthems, hymns, traditional gospel, and contemporary gospel.
- Describe the cultural/historical context.
- Sing/play gospel music.
- Evaluate the performance of the gospel choir in terms of his/her own subjective reaction, both positive and negative.
- Evaluate the performance of the gospel choir in terms of musical style and interpretation.
- Demonstrate good vocal technique, including vocal production and aural skills (learn by ear).
- Demonstrate knowledge of stylistic improvisation.
- Demonstrate use of basic music terminology.

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#### **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.

##### **Learning Outcomes**

Upon successful completion of this course, students should be able to:

- Demonstrate knowledge of repertoire studied. (CLO 1.2, 1.3, 4.2)
- Demonstrate improvement in the following: vocal technique, auditory skills, sight reading, musicianship and ensemble singing in various styles and periods of music. (CLO 4.2, 5.2)
- Demonstrate awareness of the practical and logistical considerations of performance. (CLO 2.5)
- Demonstrate individual readiness and participation during warmup, rehearsal and performance. (CLO 2.5)
- Demonstrate high regard for team building/leadership skills including: promptness, rehearsal decorum, regard for other players, part preparation, and care of sheet music. (CLO 2.1, 2.5, 3.6)

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#### **MUS 293 - Jazz Combos**

2 Credit(s)

Music reading or concurrent enrollment in MUS 101 is recommended. This course is 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. No audition required. 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, students should be able to:

- Perform competently on voice/instrument within a small jazz ensemble. (CLO 1.1, 4.2)
- Demonstrate the basic skills of instrumental jazz improvisation and accompaniment within the various forms of the jazz music repertoire, particularly the "lead sheet" format. (CLO 1.2, 3.1, 3.4, 5.1, 5.3)
- 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. (CLO 1.2, 3.2, 5.2)
- 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. (CLO 1.3, 2.5)

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### 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 orchestra experience for all. The class is limited to six 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.

### Learning Outcomes

Upon successful completion of this course, students should be able to:

- Demonstrate knowledge of repertoire studied. (CLO 1.2, 1.3, 4.2)
- 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)
- Demonstrate awareness of the practical and logistical considerations of performance. (CLO 2.5)
- Demonstrate individual readiness and participation during warmup, rehearsal and performance. (CLO 2.5)
- 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)

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### MUS 295 - Symphonic Band

2 Credit(s)

Symphonic Band provides an opportunity for woodwind, brass, and percussion students to study, rehearse, and perform all types of concert band literature. An audition is recommended for new members though not required. Returning members do not need to audition. High school or college ensemble experience is recommended. This course blends the talents of experienced community instrumentalists with student musicians creating an excellent orchestra experience for all. The Lane Symphonic band performs at least one formal concert at the end of fall, winter and spring 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, students should be able to:

- Demonstrate knowledge of repertoire studied. (CLO 1.2, 1.3, 4.2)
- 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)
- Demonstrate awareness of the practical and logistical considerations of performance. (CLO 2.5)
- Demonstrate individual readiness and participation during warmup, rehearsal and performance. (CLO 2.5)
- 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)

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### MUS 297 - Concert Choir

2 Credit(s)

This class is open to anyone interested in singing in a large ensemble. No prior experience is necessary, but ability to match pitch is required. 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.

### Learning Outcomes

Upon successful completion of this course, students should be able to:

- Demonstrate knowledge of repertoire studied. (CLO 1.2, 1.3, 4.2)
- Demonstrate improvement in the following: vocal technique, auditory skills, musicianship and ensemble singing in various styles and periods of music. (CLO 4.2, 5.2)
- Demonstrate awareness of the practical and logistical considerations of performance. (CLO 2.5)
- Demonstrate individual readiness and participation during warmup, rehearsal and performance. (CLO 2.5)
- Demonstrate high regard for team building/leadership skills including: promptness, rehearsal decorum, regard for other players, part preparation, and care of sheet music. (CLO 2.1, 2.5, 3.6)

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## Music Performance

### MUP 100 - Individual Lessons

1-2 Credit(s)

Individual instruction in technical and stylistic aspects of solo performance for pre- and non-majors. Students receive 10 50-min lessons each term in their major instrument. Instruction is offered in the following: baritone horn, bassoon, cello, clarinet, classical guitar, electric bass guitar, flute, french horn, harp, jazz guitar, oboe, percussion, piano, saxophone, string bass, trombone, trumpet, tuba, viola, violin, voice. 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, students should be able to:

- Demonstrate ability to meet individualized musical and technical objectives as assigned by instructor at a basic level. (CLO 1.1, 1.2, 3.5, 3.6, 4.2, 4.3, 5.3)

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### MUP 171 - Individual Lessons: Piano (First-year level)

2 Credit(s)

Individual instruction in technical and stylistic aspects of solo performance. Each term students enroll for one 50-minute lesson each week. Regular practice outside of lessons is expected. Consult with instructor regarding expectations. A term jury is required. Individual instruction in technical and stylistic aspects of solo performance for pre- and non-majors. Students receive 10 50-min lessons each term in their major instrument. Instruction is offered in the following: baritone horn, bassoon, cello, clarinet, classical guitar, electric bass guitar, flute, French horn, harp, jazz guitar, oboe, percussion, piano, saxophone, string bass, trombone, trumpet, tuba, viola, violin, voice. Contents and expected learning proficiencies of this course vary from term to term. 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:

- Demonstrate ability to meet individualized musical and technical objectives assigned by instructor at an intermediate level (MUP 101- MUP 199). (CLO 1.1, 1.2, 3.5, 3.6, 4.2, 4.3, 5.3)
- Demonstrate ability to perform a jury at an intermediate level (MUP 101- MUP 199) according to appropriate guidelines. (CLO 1.1, 1.2, 2.5, 3.5, 3.6, 4.2, 4.3, 5.3)

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### MUP 174 - Individual Lessons: Voice (First-year level)

2 Credit(s)

See course description for MUP 171. Contents and expected learning proficiencies of this course vary from term to term. 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:

- Demonstrate ability to meet individualized musical and technical objectives assigned by instructor at an intermediate level (MUP 101- MUP 199). (CLO 1.1, 1.2, 3.5, 3.6, 4.2, 4.3, 5.3)
- Demonstrate ability to perform a jury at an intermediate level (MUP 101- MUP 199) according to appropriate guidelines. (CLO 1.1, 1.2, 2.5, 3.5, 3.6, 4.2, 4.3, 5.3)

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### MUP 175 - Individual Lessons: Violin (First-year level)

2 Credit(s)

See course description for MUP 171. Contents and expected learning proficiencies of this course vary from term to term. 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:

- Demonstrate ability to meet individualized musical and technical objectives assigned by instructor at an intermediate level (MUP 101- MUP 199). (CLO 1.1, 1.2, 3.5, 3.6, 4.2, 4.3, 5.3)
- Demonstrate ability to perform a jury at an intermediate level (MUP 101- MUP 199) according to appropriate guidelines. (CLO 1.1, 1.2, 2.5, 3.5, 3.6, 4.2, 4.3, 5.3)

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**MUP 176 - Individual Lessons: Viola (First-year level)**

2 Credit(s)

See course description for MUP 171. 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:

- Meet the individual objectives assigned by the instructor at the beginning of each term.
- Perform a jury according to the appropriate guidelines; scales, repertoire, sight-reading.
- Participate in a minimum of one showcase concert per year

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**MUP 177 - Individual Lessons: Cello (First-year level)**

2 Credit(s)

See course description for MUP 171. 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:

- Meet the individual objectives assigned by the instructor at the beginning of each term.
- Perform a jury according to the appropriate guidelines; scales, repertoire, sight-reading.
- Participate in a minimum of one showcase concert per year

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**MUP 178 - Individual Lessons: Bass (First-year level)**

2 Credit(s)

See course description for MUP 171. Contents and expected learning proficiencies of this course vary from term to term. 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:

- Meet the individual objectives assigned by the instructor at the beginning of each term.
- Perform a jury according to the appropriate guidelines; scales, repertoire, sight-reading.
- Participate in a minimum of one showcase concert per year

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**MUP 181 - Individual Lessons: Flute (First-year level)**

2 Credit(s)

See course description for MUP 171. Contents and expected learning proficiencies of this course vary from term to term. 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:

- Meet the individual objectives assigned by the instructor at the beginning of each term.
- Perform a jury according to the appropriate guidelines; scales, repertoire, sight-reading.
- Participate in a minimum of one showcase concert per year

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**MUP 182 - Individual Lessons: Oboe (First-year level)**

2 Credit(s)

See course description for MUP 171. 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:

- Demonstrate ability to meet individualized musical and technical objectives assigned by instructor at an intermediate level (MUP 101- MUP 199). (CLO 1.1, 1.2, 3.5, 3.6, 4.2, 4.3, 5.3)

- Demonstrate ability to perform a jury at an intermediate level (MUP 101- MUP 199) according to appropriate guidelines. (CLO 1.1, 1.2, 2.5, 3.5, 3.6, 4.2, 4.3, 5.3)

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**MUP 183 - Individual Lessons: Clarinet (First-year level)**

2 Credit(s)

See course description for MUP 171. Contents and expected learning proficiencies of this course vary from term to term. 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:

- Demonstrate ability to meet individualized musical and technical objectives assigned by instructor at an intermediate level (MUP 101- MUP 199). (CLO 1.1, 1.2, 3.5, 3.6, 4.2, 4.3, 5.3)
- Demonstrate ability to perform a jury at an intermediate level (MUP 101- MUP 199) according to appropriate guidelines. (CLO 1.1, 1.2, 2.5, 3.5, 3.6, 4.2, 4.3, 5.3)

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**MUP 184 - Individual Lessons: Saxophone (First-year level).**

2 Credit(s)

See course description for MUP 171. Contents and expected learning proficiencies of this course vary from term to term. 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:

- Demonstrate ability to meet individualized musical and technical objectives assigned by instructor at an intermediate level (MUP 101- MUP 199). (CLO 1.1, 1.2, 3.5, 3.6, 4.2, 4.3, 5.3)
- Demonstrate ability to perform a jury at an intermediate level (MUP 101- MUP 199) according to appropriate guidelines. (CLO 1.1, 1.2, 2.5, 3.5, 3.6, 4.2, 4.3, 5.3)

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**MUP 185 - Individual Lessons: Bassoon (First-year level)**

2 Credit(s)

See course description for MUP 171. 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:

- Demonstrate ability to meet individualized musical and technical objectives assigned by instructor at an intermediate level (MUP 101- MUP 199). (CLO 1.1, 1.2, 3.5, 3.6, 4.2, 4.3, 5.3)
- Demonstrate ability to perform a jury at an intermediate level (MUP 101- MUP 199) according to appropriate guidelines. (CLO 1.1, 1.2, 2.5, 3.5, 3.6, 4.2, 4.3, 5.3)

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**MUP 186 - Individual Lessons: Trumpet (First-year level)**

2 Credit(s)

See course description for MUP 171. Contents and expected learning proficiencies of this course vary from term to term. 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:

- Demonstrate ability to meet individualized musical and technical objectives assigned by instructor at an intermediate level (MUP 101- MUP 199). (CLO 1.1, 1.2, 3.5, 3.6, 4.2, 4.3, 5.3)
- Demonstrate ability to perform a jury at an intermediate level (MUP 101- MUP 199) according to appropriate guidelines. (CLO 1.1, 1.2, 2.5, 3.5, 3.6, 4.2, 4.3, 5.3)

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**MUP 187 - Individual Lessons: French Horn (First-year level)**

2 Credit(s)

See course description for MUP 171. Contents and expected learning proficiencies of this course vary from term to term. 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:

- Demonstrate ability to meet individualized musical and technical objectives assigned by instructor at an intermediate level (MUP 101- MUP 199). (CLO 1.1, 1.2, 3.5, 3.6, 4.2, 4.3, 5.3)

- Demonstrate ability to perform a jury at an intermediate level (MUP 101- MUP 199) according to appropriate guidelines. (CLO 1.1, 1.2, 2.5, 3.5, 3.6, 4.2, 4.3, 5.3)

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#### **MUP 188 - Individual Lessons: Trombone (First-year level)**

2 Credit(s)

See course description for MUP 171. Contents and expected learning proficiencies of this course vary from term to term. 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:

- Demonstrate ability to meet individualized musical and technical objectives assigned by instructor at an intermediate level (MUP 101- MUP 199). (CLO 1.1, 1.2, 3.5, 3.6, 4.2, 4.3, 5.3)
- Demonstrate ability to perform a jury at an intermediate level (MUP 101- MUP 199) according to appropriate guidelines. (CLO 1.1, 1.2, 2.5, 3.5, 3.6, 4.2, 4.3, 5.3)

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#### **MUP 189 - Individual Lessons: Baritone Horn (First-year level)**

2 Credit(s)

See course description for MUP 171. Contents and expected learning proficiencies of this course vary from term to term. 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:

- Demonstrate ability to meet individualized musical and technical objectives assigned by instructor at an intermediate level (MUP 101- MUP 199). (CLO 1.1, 1.2, 3.5, 3.6, 4.2, 4.3, 5.3)
- Demonstrate ability to perform a jury at an intermediate level (MUP 101- MUP 199) according to appropriate guidelines. (CLO 1.1, 1.2, 2.5, 3.5, 3.6, 4.2, 4.3, 5.3)

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#### **MUP 190 - Individual Lessons: Tuba (First-year level)**

2 Credit(s)

See course description for MUP 171. Contents and expected learning proficiencies of this course vary from term to term. 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:

- Meet the individual objectives assigned by the instructor at the beginning of each term.
- Perform a jury according to the appropriate guidelines; scales, repertoire, sight-reading.
- Participate in a minimum of one showcase concert per year.

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#### **MUP 191 - Individual Lessons: Percussion (First-year level)**

2 Credit(s)

See course description for MUP 171. Contents and expected learning proficiencies of this course vary from term to term. 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:

- Demonstrate ability to meet individualized musical and technical objectives assigned by instructor at an intermediate level (MUP 101- MUP 199). (CLO 1.1, 1.2, 3.5, 3.6, 4.2, 4.3, 5.3)
- Demonstrate ability to perform a jury at an intermediate level (MUP 101- MUP 199) according to appropriate guidelines. (CLO 1.1, 1.2, 2.5, 3.5, 3.6, 4.2, 4.3, 5.3)

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#### **MUP 192 - Individual Lessons: Electric Bass (First-year level)**

2 Credit(s)

See course description for MUP 171. Contents and expected learning proficiencies of this course vary from term to term. 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:

- Meet the individual objectives assigned by the instructor at the beginning of each term.

- Perform a jury according to the appropriate guidelines; scales, repertoire, sight-reading.
- Participate in a minimum of one showcase concert per year.

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#### **MUP 194 - Individual Lessons: Guitar (First-year level)**

2 Credit(s)

See course description for MUP 171. Contents and expected learning proficiencies of this course vary from term to term. 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:

- Demonstrate ability to meet individualized musical and technical objectives assigned by instructor at an intermediate level (MUP 101- MUP 199). (CLO 1.1, 1.2, 3.5, 3.6, 4.2, 4.3, 5.3)
- Demonstrate ability to perform a jury at an intermediate level (MUP 101- MUP 199) according to appropriate guidelines. (CLO 1.1, 1.2, 2.5, 3.5, 3.6, 4.2, 4.3, 5.3)

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#### **MUP 271 - Individual Lessons: Piano (Second-year level)**

2 Credit(s)

Individual instruction in technical and stylistic aspects of solo performance. Each term students enroll for one 50-minute lesson each week. Regular practice outside of lessons is expected. Consult with instructor regarding expectations. Contents and expected learning proficiencies of this course vary from term to term. Individual instruction in technical and stylistic aspects of solo performance for pre- and non-majors. Students receive 10 50-min lessons each term in their major instrument. Instruction is offered in the following: baritone horn, bassoon, cello, clarinet, classical guitar, electric bass guitar, flute, French horn, harp, jazz guitar, oboe, percussion, piano, saxophone, string bass, trombone, trumpet, tuba, viola, violin, voice. Contents and expected learning proficiencies of this course vary from term to term. 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:

- Demonstrate ability to meet individualized musical and technical objectives assigned by instructor at an upper intermediate level (MUP 200 - MUP 299). (CLO 1.1, 1.2, 3.5, 3.6, 4.2, 4.3, 5.3)
- Demonstrate ability to perform a jury at an upper intermediate level (MUP 200 - MUP 299) according to appropriate guidelines. (CLO 1.1, 1.2, 2.5, 3.5, 3.6, 4.2, 4.3, 5.3)

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#### **MUP 274 - Individual Lessons: Voice (Second-year level)**

2 Credit(s)

See course description for MUP 271. Contents and expected learning proficiencies of this course vary from term to term. 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:

- Demonstrate ability to meet individualized musical and technical objectives assigned by instructor at an upper intermediate level (MUP 200 - MUP 299). (CLO 1.1, 1.2, 3.5, 3.6, 4.2, 4.3, 5.3)
- Demonstrate ability to perform a jury at an upper intermediate level (MUP 200 - MUP 299) according to appropriate guidelines. (CLO 1.1, 1.2, 2.5, 3.5, 3.6, 4.2, 4.3, 5.3)

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#### **MUP 275 - Individual Lessons: Violin (Second-year level)**

2 Credit(s)

See course description for MUP 271. Contents and expected learning proficiencies of this course vary from term to term. 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:

- Meet the individual objectives assigned by the instructor at the beginning of each term.
- Perform a jury according to the appropriate guidelines; scales, repertoire, sight-reading.
- Participate in a minimum of two Showcase concerts per year.

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#### **MUP 281 - Individual Lessons: Flute (Second-year level)**

2 Credit(s)

See course description for MUP 271. Contents and expected learning

proficiencies of this course vary from term to term. 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:

- Meet the individual objectives assigned by the instructor at the beginning of each term.
- Perform a jury according to the appropriate guidelines; scales, repertoire, sight-reading.
- Participate in a minimum of two Showcase concerts per year.

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#### **MUP 283 - Individual Lessons: Clarinet (Second-year level)**

2 Credit(s)

See course description for MUP 271. Contents and expected learning proficiencies of this course vary from term to term. 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:

- Demonstrate ability to meet individualized musical and technical objectives assigned by instructor at an upper intermediate level (MUP 200 - MUP 299). (CLO 1.1, 1.2, 3.5 3.6 4.2 4.3 5.3)
- Demonstrate ability to perform a jury at an upper intermediate level (MUP 200 - MUP 299) according to appropriate guidelines. (CLO 1.1, 1.2, 2.5, 3.5, 3.6, 4.2, 4.3, 5.3)

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#### **MUP 284 - Individual Lessons: Saxophone (Second-year level)**

2 Credit(s)

See course description for MUP 271. Contents and expected learning proficiencies of this course vary from term to term. 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:

- Demonstrate ability to meet individualized musical and technical objectives assigned by instructor at an upper intermediate level (MUP 200 - MUP 299). (CLO 1.1, 1.2, 3.5 3.6 4.2 4.3 5.3)
- Demonstrate ability to perform a jury at an upper intermediate level (MUP 200 - MUP 299) according to appropriate guidelines. (CLO 1.1, 1.2, 2.5, 3.5, 3.6, 4.2, 4.3, 5.3)

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#### **MUP 286 - Individual Lessons: Trumpet (Second-year level)**

2 Credit(s)

See course description for MUP 271. Contents and expected learning proficiencies of this course vary from term to term. 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:

- Demonstrate ability to meet individualized musical and technical objectives assigned by instructor at an upper intermediate level (MUP 200 - MUP 299). (CLO 1.1, 1.2, 3.5 3.6 4.2 4.3 5.3)
- Demonstrate ability to perform a jury at an upper intermediate level (MUP 200 - MUP 299) according to appropriate guidelines. (CLO 1.1, 1.2, 2.5, 3.5, 3.6, 4.2, 4.3, 5.3)

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#### **MUP 287 - Individual Lessons: French Horn (Second-year level)**

2 Credit(s)

See course description for MUP 271. Contents and expected learning proficiencies of this course vary from term to term. 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:

- Meet the individual objectives assigned by the instructor at the beginning of each term.
- Perform a jury according to the appropriate guidelines; scales, repertoire, sight-reading.
- Participate in a minimum of two Showcase concerts per year.

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#### **MUP 288 - Individual Lessons: Trombone (Second-year level)**

2 Credit(s)

See course description for MUP 271. Contents and expected learning proficiencies of this course vary from term to term. 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:

- Demonstrate ability to meet individualized musical and technical objectives assigned by instructor at an upper intermediate level (MUP 200 - MUP 299). (CLO 1.1, 1.2, 3.5 3.6 4.2 4.3 5.3)
- Demonstrate ability to perform a jury at an upper intermediate level (MUP 200 - MUP 299) according to appropriate guidelines. (CLO 1.1, 1.2, 2.5, 3.5, 3.6, 4.2, 4.3, 5.3)

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#### **MUP 289 - Individual Lessons: Baritone Horn (Second-year level)**

2 Credit(s)

See course description for MUP 271. Contents and expected learning proficiencies of this course vary from term to term. 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:

- Demonstrate ability to meet individualized musical and technical objectives assigned by instructor at an upper intermediate level (MUP 200 - MUP 299). (CLO 1.1, 1.2, 3.5 3.6 4.2 4.3 5.3)
- Demonstrate ability to perform a jury at an upper intermediate level (MUP 200 - MUP 299) according to appropriate guidelines. (CLO 1.1, 1.2, 2.5, 3.5, 3.6, 4.2, 4.3, 5.3)

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#### **MUP 290 - Individual Lessons: Tuba (Second-year level)**

2 Credit(s)

See course description for MUP 271. 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:

- Demonstrate ability to meet individualized musical and technical objectives assigned by instructor at an upper intermediate level (MUP 200 - MUP 299). (CLO 1.1, 1.2, 3.5 3.6 4.2 4.3 5.3)
- Demonstrate ability to perform a jury at an upper intermediate level (MUP 200 - MUP 299) according to appropriate guidelines. (CLO 1.1, 1.2, 2.5, 3.5, 3.6, 4.2, 4.3, 5.3)

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#### **MUP 291 - Individual Lessons: Percussion (Second-year level)**

2 Credit(s)

See course description for MUP 271. Contents and expected learning proficiencies of this course vary from term to term. 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:

- Demonstrate ability to meet individualized musical and technical objectives assigned by instructor at an upper intermediate level (MUP 200 - MUP 299). (CLO 1.1, 1.2, 3.5 3.6 4.2 4.3 5.3)
- Demonstrate ability to perform a jury at an upper intermediate level (MUP 200 - MUP 299) according to appropriate guidelines. (CLO 1.1, 1.2, 2.5, 3.5, 3.6, 4.2, 4.3, 5.3)

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#### **MUP 292 - Individual Lessons: Electric Bass (Second-year level)**

2 Credit(s)

See course description for MUP 271. Contents and expected learning proficiencies of this course vary from term to term. 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:

- Meet the individual objectives assigned by the instructor at the beginning of each term.
- Perform a jury according to the appropriate guidelines; scales, repertoire, sight-reading.
- Participate in a minimum of two Showcase concerts per year.

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#### **MUP 294 - Individual Lessons: Guitar (Second-year level)**

2 Credit(s)

See course description for MUP 271. Contents and expected learning proficiencies of this course vary from term to term. 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:

- Demonstrate ability to meet individualized musical and technical objectives assigned by instructor at an upper intermediate level (MUP 200 - MUP 299). (CLO 1.1, 1.2, 3.5 3.6 4.2 4.3 5.3)
- Demonstrate ability to perform a jury at an upper intermediate level (MUP 200 - MUP 299) according to appropriate guidelines. (CLO 1.1, 1.2, 2.5, 3.5, 3.6, 4.2, 4.3, 5.3)

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## 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:

- 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.
- 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.
- Use effective communication to establish a therapeutic client-centered relationship and advocate for a health behavior change based on assessment of health risks.
- Design and evaluate a health behavior change for self and for a selected client using relevant evidence and family/cultural data.
- Demonstrate beginning use of selected nursing frameworks, including the legal ethical base for practice, and their application to the practice of nursing.
- Recognize the importance and relevance of reflection on clinical experiences and on competencies and its influence on personal and professional behavior.
- Demonstrate use of the importance of fulfilling commitments to the team in timely completion of assignments.
- Demonstrate use of effective learning strategies in a performance-based curriculum.

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### NRS 110B - Foundations of Nursing-Health Promotion Clinical Lab

5 Credit(s)

Clinical Lab required for NRS110A.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- 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.
- 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.
- Use effective communication to establish a therapeutic client-centered relationship and advocate for a health behavior change based on assessment of health risks.
- Design and evaluate a health behavior change for self and for a selected client using relevant evidence and family/cultural data.
- Demonstrate beginning use of selected nursing frameworks, including the legal ethical base for practice, and their application to the practice of nursing.

- Recognize the importance and relevance of reflection on clinical experiences and on competencies and its influence on personal and professional behavior.
- Demonstrate use of the importance of fulfilling commitments to the team in timely completion of assignments.
- Demonstrate use of effective learning strategies in a performance-based curriculum.

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### 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. (Concurrent with Pathophysiology 1 and Pharmacology 2). (Can follow Foundations of Nursing in Acute Care I).

#### Learning Outcomes

Upon successful completion of the course, the student should be able to:

- 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.
- 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.
- 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.
- Identify roles and functions of members of the health care team, such as Case Management in order to provide care for the chronically ill.
- Use therapeutic communication skills in the development of therapeutic relationships with patients and families.
- 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.

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### NRS 111B - Foundations of Nursing in Chronic Illness 1- Clinical Lab

4 Credit(s)

Corequisite: NRS 111A. Clinical Lab required for NRS111A.

**Corequisite:** NRS 111A.

#### Learning Outcomes

Upon successful completion of the course, the student should be able to:

- 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.
- 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.
- 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.
- Identify roles and functions of members of the health care team in order to provide care for the chronically ill.

- Use therapeutic communication skills in the development of therapeutic relationships with patients and families.
- 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.

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### 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:** BI 101F or BI 101K 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:

- 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.
- 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.
- 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.
- 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.
- Use therapeutic communication skills in the development of therapeutic relationships with patients and families.
- Identify roles of health care team members involved in providing care to patients and families with acute conditions/processes.
- Discuss delegation needs for patient care with experienced nurses.

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### 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:

- 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.
- 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.
- 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.
- 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.
- Use therapeutic communication skills in the development of therapeutic relationships with patients and families.
- Identify roles of health care team members involved in providing care to patients and families with acute conditions/processes.
- Discuss delegation needs for patient care with experienced nurses.

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### NRS 115 - LPN Transition to OCNE

6 Credit(s)

This course introduces the learner to framework of the OCNE curriculum including the OCNE competencies and benchmarks and the clinical judgment model. The student is introduced to the role and practice of the registered nurse. Concepts and applicability of the ANA Code of Ethics will be emphasized.

Students will be introduced to evidenced-based care including levels of evidence. Concepts of health promotion, chronicity and acuity as applied to nursing practice will be explored. Case studies will be used to provide students opportunities to demonstrate critical thinking in the provision of patient care. The student is introduced to and will practice intentional learning and reflection related to the role and practice of the person preparing to be a registered nurse. The course includes classroom, simulation and lab learning experiences including evaluation of certain clinical skills.

**Prerequisite:** NRS 230 and NRS 232.

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### 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.

**Corequisite:** NRS 221B.

#### Learning Outcomes

Upon successful completion of the course, the student should be able to:

- 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.
- 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.
  - 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.
  - 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).
  - 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.
  - 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.
  - 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).

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### **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:

- 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.
- 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.
- 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.
- 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).
- 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.
- 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.
- 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).

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### **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 recognitional 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:** Admission in Nursing Program.

#### **Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Conduct evidence-based assessment, using age, developmental and culturally appropriate communication skills, specifically:
- 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).
- Recognize potential problems and rapidly changing physiologic and behavioral situations.
- Recognizes pathophysiological changes and symptoms experienced by the client, which are associated with the dying process.
- Regularly monitors client's level of comfort and ability to manage symptoms and symptom distress.

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### **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:

- Conduct evidence-based assessment, using age, developmental and culturally appropriate communication skills, specifically:
- 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);.
- Recognize potential problems and rapidly changing physiologic and behavioral situations.
- Recognizes pathophysiological changes and symptoms experienced by the client, which are associated with the dying process.
- Regularly monitors client's level of comfort and ability to manage symptoms and symptom distress.

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### **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. May be offered online.

**Corequisite:** NRS 224B.

#### **Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Make sound clinical judgments, based on increasingly complex knowledge base and experience in care selected populations.
- Set priorities in the provision of care with attention to client needs and available resources.
- Practice self-reflection and self-analysis and identify areas for improvement.
- Advocate for inclusion of client/family uniqueness in all aspects of care.
- Identify costs and benefits of resource options for client care.
- Regularly evaluate and augment own leadership in client and team situations in the selected population.
- Delegate to, and evaluate, others ensuring that the task is within their scope of practice.
- Access, evaluate and integrate new learning into practice.
- Identify a vision and influence others to share the vision to support quality of care.
- 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.
- Demonstrate competent performance when evaluated against national standards and criteria accepted in selected populations and/or settings.
- Promote collaborative teamwork and empower others.



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**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:

- Make sound clinical judgments, based on increasingly complex knowledge base and experience in care selected populations.
- Set priorities in the provision of care with attention to client needs and available resources.
- Practice self-reflection and self-analysis and identify areas for improvement.
- Advocate for inclusion of client/family uniqueness in all aspects of care.
- Identify costs and benefits of resource options for client care.
- Regularly evaluate and augment own leadership in client and team situations in the selected population.
- Delegate to, and evaluate, others ensuring that the task is within their scope of practice.
- Access, evaluate and integrate new learning into practice.
- Identify a vision and influence others to share the vision to support quality of care.
- 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.
- Demonstrate competent performance when evaluated against national standards and criteria accepted in selected populations and/or settings.
- Promote collaborative teamwork and empower others.

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**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:

- 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.
- 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.
- 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.
- 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.

- 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.

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**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:

- 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
- 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
- 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.
- 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
- 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.

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**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. Prerequisites: Anatomy and Physiology sequence; Microbiology.

**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:

- 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.
- 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.
- 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.
- 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:

- Access and interpret current, reliable information about selected pathophysiological processes.
- 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.
- 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, symptom experience, symptom reporting, and symptom management.
- Communicate effectively with other health professionals regarding selected pathophysiological processes, focusing on:
  - using appropriate technical language.
  - clarifying technical details of pathophysiological processes.
  - 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. May be offered in a format with some online instruction.

**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:

- 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.
- Identify members of the health care team and the ethical and legal responsibilities of the LPN as a member of the team.
- Perform within the legal and ethical guidelines of the profession.
- Identify the stages of the grieving process and plan/implement appropriate interventions for persons experiencing grief.
- Identify the physiological and psychological effects of aging and how these effects would affect care of an elderly person.
- Describe and demonstrate assessment techniques and other methods of gathering data for patient care.
- Demonstrate an understanding of and the ability to apply principles of medical and surgical asepsis.
- Demonstrate the ability to calculate medication dosages correctly and administer oral medications safely.
- 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)

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. May be offered in a format with some online instruction.

**Prerequisite:** WR 115 and HP 100 and BI 233 and PSY 201

**Corequisite:** PN 101A

#### **Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- 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.
- Identify members of the health care team and the ethical and legal responsibilities of the LPN as a member of the team.
- Perform within the legal and ethical guidelines of the profession.
- Identify the stages of the grieving process and plan/implement appropriate interventions for persons experiencing grief.
- Identify the physiological and psychological effects of aging and how these effects would affect care of an elderly person.
- Describe and demonstrate assessment techniques and other methods of gathering data for patient care.
- Demonstrate an understanding of and the ability to apply principles of medical and surgical asepsis.
- Demonstrate the ability to calculate medication dosages correctly and administer oral medications safely.
- 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)

**Prerequisite:** PN 101A; **PN 101B Corequisite:** PN 102B. 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:

- Identify potential legal and ethical issues related to client decision-making and informed consent in acute care settings.
- Use therapeutic communication skills in the development of therapeutic relationships with clients and families.
- 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.
- Describe the pathophysiology, perioperative management, and nursing interventions for the patient who is having or has had surgery.
- Demonstrate competency in performing skills taught in PN 101 and 102.
- Demonstrate ability to calculate medication doses accurately.
- Demonstrate safe and competent clinical application of acquired knowledge and skills when caring for patients.

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#### **PN 102B - Practical Nursing 2 Lab**

5 Credit(s)

Prerequisite: PN 101A; PN 101B Corequisite: PN 102A 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.

**Prerequisite:** PN 101A and PN 101B

**Corequisite:** PN 102A

#### **Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Identify potential legal and ethical issues related to client decision-making and informed consent in acute care settings.
- Use therapeutic communication skills in the development of therapeutic relationships with clients and families.
- 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.
- Describe the pathophysiology, perioperative management, and nursing interventions for the patient who is having or has had surgery.
- Demonstrate competency in performing skills taught in PN 101 and 102.
- Demonstrate ability to calculate medication doses accurately.
- Demonstrate safe and competent clinical application of acquired knowledge and skills when caring for patients.

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#### **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:

- 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.
- Describe appropriate care for the woman and family during an uncomplicated pregnancy.
- Describe appropriate nursing care of the mother with an uncomplicated labor, delivery, and postpartum period.
- Describe appropriate nursing care for the full-term, uncompromised neonate.
- Discuss/identify behaviors appropriate for developmental stages in infancy through toddler and pharmacological considerations in caring for the pediatric client.
- Describe the principles of pharmacodynamics and pharmacokinetics.
- Accurately calculate drug dosages and administer medications.
- 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.
- Describe trends for practical nursing in the future, considering societal changes, roles, and technical advances.
- Demonstrate increasing aptitude in recognizing, defining and functioning within the accepted roles of nursing, especially provider of care, member within the discipline of nursing.
- Describe the role of the practical nurse in the care of the client with mental health/psychiatric disorders.
- Demonstrate competency and safety in the provision of nursing care.

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#### **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.

**Prerequisite:** PN 102A and PN 102B

**Corequisite:** PN 103A

#### **Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- 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.
- Describe appropriate care for the woman and family during an uncomplicated pregnancy.
- Describe appropriate nursing care of the mother with an uncomplicated labor, delivery, and postpartum period.
- Describe appropriate nursing care for the full-term, uncompromised neonate.
- Discuss/identify behaviors appropriate for developmental stages in infancy through toddler and pharmacological considerations in caring for the pediatric client.
- Describe the principles of pharmacodynamics and pharmacokinetics.



- Accurately calculate drug dosages and administer medications.
- 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.
- Describe trends for practical nursing in the future, considering societal changes, roles, and technical advances.
- Demonstrate increasing aptitude in recognizing, defining and functioning within the accepted roles of nursing, especially provider of care, member within the discipline of nursing.
- Describe the role of the practical nurse in the care of the client with mental health/psychiatric disorders.
- Demonstrate competency and safety in the provision of nursing care.

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## Nutrition

### FN 105 - Nutrition for Foodservice Professionals

3 Credit(s)

Nutrient functions, food sources and guidelines are discussed as well as issues concerning those nutrients and the sustainability of our food system will also be explored. Some of the other topics include digestion, food allergies, vegetarianism, eating disorders, and religious eating traditions. May be offered through online.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Identify current USDA My Pyramid principles and food groups.
- List the nutrient contributions of each food group.
- Discuss the nine areas where dietary guidelines make recommendations.
- Develop recipes and menus using dietary guideline recommendations, food guides and food labels.
- Evaluate recipes and menus using dietary guideline recommendations, food guides and food labels.
- Discuss characteristics, functions and best sources of each of the major nutrients.
- List the primary characteristics, functions and sources of vitamins, water and minerals.
- Describe the process of human digestion.
- Determine energy needs based upon basal metabolic rate and exercise expenditure.
- Discuss and demonstrate cooking techniques and storage principles and portion sizes for maximum retention of nutrients and effective weight management.
- Discuss exchange groups.
- Identify common food allergies and determine appropriate substitutions (i.e. gluten, sugar, lactose free).
- Discuss contemporary nutritional issues (i.e. vegetarianism, heart healthy menus and religious dietary laws).
- Apply emerging technologies (computerization for nutrient analysis, recipe analysis software).
- Discuss marketing of healthy menu options.
- Discuss weight management and exercise and nutrition over the lifecycle

### FN 110 - Personal Nutrition

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. Does NOT satisfy the nutrition requirement for health profession programs. May be offered online.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Evaluate messages in mainstream media regarding the validity of nutrition information and marketing claims.
- Evaluate current food, diet and supplement options and understand which are best—and why—based on individual goals.
- Evaluate a food's nutrient content through reading the food label.
- Identify foods that support optimal health while navigating through grocery stores, restaurants, food courts and home kitchens.
- Identify ways to stretch food dollars to meet individual nutrient needs within a reasonable budget.
- Demonstrate how to incorporate local and seasonal foods into daily food selections.

- Discuss behavior modification and the complex causes and solutions of obesity.
- Have a collection of culturally diverse recipes for healthy eating.
- Suggest modifications in an individual's diet to decrease chronic disease risk.
- Identify the role of a variety of nutrients in promoting health.
- Communicate healthy attitudes about food and weight.
- Describe how dietary intake may need to be modified based on special situations like vegetarianism, or a gluten-free diet.
- Describe basic cooking techniques for meats, vegetables, grains, and mixed dishes.

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### 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. May be offered online.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Develop eating patterns that promote health.
- Make eating choices based on some knowledge of a sustainable U.S. food production system.
- Avoid restrictive dietary formulas that perpetuate fearful and anxious attitudes about food and eating.
- Describe the responsibilities of parents and children when it comes to feeding.
- Identify the role of each food group in a nutritionally adequate diet.
- Select, prepare and enjoy wholesome food that tastes good and is easily prepared using inexpensive, locally available foods.
- Have a collection of recipes for the above types of foods.
- Describe appropriate techniques for feeding infants and children.
- Suggest appropriate solutions to feeding problems with infants and children.
- Understand both sides of some nutrition issues such as breast vs. formula feeding and vegetarianism for children.
- Have menu ideas for adults and children of all ages.
- Evaluate children's books for their messages about food and health.

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### 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. May be offered online.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Develop an eating and hydration plan that enhances health and athletic performance.
- Identify the role of a variety of nutrients in maintaining a body that is healthy and that supports athletic performance.
- Navigate healthfully through grocery stores, restaurants, food courts and home kitchens.
- Have a collection of healthy recipes and menus for healthy eating during an active lifestyle.
- Evaluate current food, diet and supplement options and understand which are best based on individual goals.
- Maintain healthy attitudes about food and weight.
- Understand the role of exercise and nutrition in the management of some chronic diseases

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### FN 225 - Nutrition

4 Credit(s)

Food sources, functions, and requirements of the major nutrients are discussed. Nutrient utilization, deficiencies, toxicities and their relationship to disease prevention will be covered. This course is designed for health profession majors. No chemistry prerequisite is required. May be offered online.

#### Learning Outcomes

Upon completion of this course, the successful student will be able to:

- Define and classify the six classes of nutrients.
- Identify where the six classes of nutrients are found in foods.

- Explain how the six classes of nutrients are digested, absorbed, metabolized, and utilized.
- Distinguish between adequate nutrient intake, deficiencies, and toxicities and how these levels impact body systems and health outcomes.
- Acknowledge the importance of a moderate approach when it comes to Nutrition and weight management, recognizing all foods can fit into a healthful diet.
- Recognize that nutrition and its effect on our physical body is only one dimension of health and others are equally important, including exercise, sleep, finding purpose, freedom from excessive stress and community relationships.
- Apply scientific reasoning to evaluate the evidence base and validity of nutrition information in the media.
- Record and evaluate personal dietary intake using the Recommended Dietary Allowances, Dietary Guidelines, and various food guides and identify behavior change strategies for improvement if necessary.
- Critically evaluate and compare nutrition labels and determine the nutrient density of each food.
- Summarize factors that facilitate or constrain lifestyle choices that impact health outcomes.
- Identify guidelines and recommendations for choosing nutrition supplements and appropriate use.
- Describe how diet, prior training, duration and intensity of activity impact fuel use before, during, and after exercise.

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- Apply knowledge and skills to contemporary problems and issues. Students apply epistemological concepts to questions about bias in American higher education and mass media.

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## 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. May be offered online.

#### 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. Analyze concepts of good and evil, right and wrong, justice and injustice, duty, responsibility, character, and successful living.
- 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.
- 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.
- 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.
- 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.
- Understand the diversity of human experience and thought, individually and collectively. Students survey a wide array of ethical theories.
- 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.

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### 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. May be offered online.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

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### 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. May be offered online.

#### 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. Analyze the nature of the self and the world, the relationship between matter and consciousness and free will.
- 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.
- Understand the role of individuals and institutions within the context of society. Students study contrasting views of the individual in Eastern and Western philosophy.
- 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.
- 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.
- 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.
- 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.

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### 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. May be offered online.

## 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.
- 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.
- 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.
- 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.
- 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.
- Utilize appropriate information literacy skills in written and oral communication. Students critically analyze arguments in class discussion and in critical essays and papers.
- 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.
- 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.

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## 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:

- Achieve a higher level of fitness.
- Identify benefits of aerobic, strength, core, agility, and flexibility training.
- Assess one's fitness level.
- Apply effective goal-setting methods.
- List factors influencing fitness.
- List major components of fitness.
- Identify basic fitness principles.
- Understand general exercise recommendations.
- Assess one's intensity level during exercise.
- Engage in a safe and effective exercise regime.
- Develop a personalized exercise plan.
- Identify core muscles and their functions.
- Understand how to engage core muscles in exercises as well as daily tasks.
- Understand the relation of nutrition and hydration to functioning.

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### 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:

- Maintain or increase one's level of fitness.
- Identify benefits of aerobic, strength, core, agility, and flexibility training.
- Assess one's level of fitness.
- Apply effective goal-setting methods.

- List factors influencing fitness.
- List major components of fitness.
- Identify basic fitness principles.
- Understand general exercise recommendations.
- Assess one's level of intensity during exercise.
- Engage in a safe and effective exercise regime.
- Understand and experience the benefits of cross-training.
- Understand and experience the benefits of periodization.
- Identify the benefits of interval training.
- Execute basic step, kickboxing and dance aerobics combinations.
- Identify core muscles and their functions.
- Develop a personalized exercise plan.
- Understand the relation of nutrition to functioning.

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### 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:

- Practice a safe and effective exercise regime.
- Maintain or increase one's fitness level.
- Identify benefits of aerobic exercise, resistance training and flexibility training.
- Discover and apply methods for effective goal setting.
- Develop a personalized exercise plan.
- Identify and apply basic fitness principles and recommendations.
- Develop greater body/mind awareness and appreciation, incorporate self-compassion techniques.
- Understand aerobic kickboxing terminology.
- Execute aerobic patterns and kickboxing combinations.
- Identify individual target heart rate.
- Understand rate of perceived exertion and "talk test."

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### 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:

- Practice a safe and effective exercise regime.
- Maintain or increase one's fitness level.
- Identify benefits of resistance training, aerobic exercise, flexibility and core training.
- Discover and apply methods for effective goal setting.
- To learn and utilize various resistance training methods.
- Understand physiological responses to exercise demands.
- Develop a personalized exercise plan.
- Identify and apply basic fitness principles.
- Develop greater body/mind awareness and appreciation, incorporate self-compassion techniques.

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### 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:

- Execute safe and effective exercises.
- Maintain or increase fitness level.
- List benefits of aerobic exercise, resistance training, flexibility and core training.
- Learn and apply methods for effective goal setting.
- Identify at least one fitness principle.



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**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:

- Increase aerobic fitness levels.
- Increase cardiovascular fitness, improve muscle tone and flexibility.
- Understand how to execute the four basic Zumba dance steps: Salsa, Reggaton, Cumbia and Merengue.
- Develop the knowledge of the basic Zumba steps plus other Latin dance steps.
- Gain knowledge of basic human anatomy, dance training terminology, and other various exercise science topics.
- Gain knowledge of and participate in a variety of choreographed dances.
- Assess one's intensity level during exercise.
- Engage in a safe and effective exercise regime.
- Develop greater body awareness and appreciation, incorporate self-compassion techniques and patience.

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**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:

- Gain knowledge and understanding of the benefits of exercise.
- Assess one's own level of physical fitness.
- Understand the make-up of a quality fitness workout and the five components of health-related fitness.
- Develop and maintain a higher level of physical fitness.
- Understand basic nutrition principles as they relate to lifelong weight maintenance and fueling for performance.
- Develop knowledge and skills of safe cardiovascular, strength and flexibility exercises that help enhance health.
- Develop and/or enhance a positive interest in exercise and conditioning for continued interest, enjoyment, improvement and participation.

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**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:

- Develop and improve cardiovascular fitness and muscular endurance.
- Develop knowledge of flexibility and core exercises that compliment walking.
- Develop efficient walking techniques.
- Develop a positive interest in walking for continued interest, enjoyment, improvement and participation.
- Develop the knowledge, ability to train, and compete in a walking competition (Road Run).
- Understand basic nutrition principles as they relate to lifelong weight maintenance and fueling for performance.
- Understand the make-up of a quality fitness workout and the five components of health-related fitness.
- Gain knowledge of and practice in different types of training programs and routines.

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**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:

- Understand and incorporate a variety of cycle riding positions.
- Understand and participate in a variety of cycling workout programs.
- Understand the muscular activation patterns used during cycling.
- Correctly adjust and operate the cycling bikes.
- Improve their cardio-respiratory fitness and muscular endurance.
- Develop core endurance.
- Understand the make-up of a quality fitness workout and the five components of health-related fitness.
- Understand basic nutrition principles as they relate to lifelong weight maintenance and fueling for performance.

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**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:

- Identify the components of health-related physical fitness and their benefits to one's overall health.
- Actively participate in a wide variety of fitness activities displaying proper form, technique, and utilizing a variety of equipment.
- Understand basic nutrition principles as they relate to lifelong weight maintenance.
- Understand the role of physical activity, proper nutrition, and sufficient rest and relaxation as they relate to lifelong health and wellness.
- Set appropriate fitness and health behavior goals to either improve or maintain one's current health and fitness level.

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**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:

- 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.
- Understand the benefits of cross-training activities.
- Understand the role of physical activity in the prevention of chronic disease.
- Understand the role of physical activity, proper nutrition, and sufficient rest and relaxation as they relate to lifelong health and wellness.
- Model appropriate exercise and lifestyle behaviors that contribute to lifelong wellness.
- Understand how to assess one's current fitness level using a variety of techniques.
- Show progression of learning and fitness outcomes from PE 183F.

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**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:

- Develop and improve cardiovascular fitness and muscle endurance.
- Develop knowledge of flexibility and core exercises that compliment jogging.

- Develop efficient jogging/ running techniques.
- Develop a positive interest in jogging for continued interest, enjoyment, improvement and participation.
- Develop the knowledge, ability to train, and compete in a jogging/running competition (Road Run).
- Understand basic nutrition principles as they relate to lifelong weight maintenance and fueling for performance.
- Understand the make-up of a quality fitness workout and the five components of health-related fitness.
- Gain knowledge of and practice in different types of training programs and routines.

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#### 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:

- Enhance warm-up and flexibility skills through stretching for all major muscle groups.
- Enhance strength training abilities including strengthening and endurance of all major muscle groups using the stability ball.
- Enhance cardiovascular endurance by increasing heart rate using the stability ball.
- Improve overall core strength and function by integrating and improving agility, balance and coordination in all three planes of motion.
- Provide knowledge of stability ball exercises and skills, training terminology, and basic human anatomy and physiology.
- To develop knowledge of progressive exercises for all muscle groups using the stability ball.
- Compare and evaluate nutritional intake to recommended governmental guidelines.
- Increase your interest in developing and maintaining your overall health and wellness.

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#### 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:

- Gain overall body strength and appearance.
- Develop knowledge of weight training skills, terminology, rules, safety, and basic human anatomy.
- Progressively develop their strength training skills.
- Develop knowledge of basic exercises for all major muscles groups.
- Gain knowledge of exercise programs and routine.
- Understand basic nutrition principles as they relate to lifelong weight maintenance and fueling for performance.
- Improve fitness level.

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#### 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

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#### 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:

- Gain knowledge of weight training benefits, skills, terminology, safety and anatomy.
- Assess one's own level of strength in specific major muscles.
- Develop and utilize knowledge of safe and effective basic and progressive level exercises for major muscles.
- Gain and improve muscle strength and tone through safe and effective workouts.
- Gain knowledge of exercise programs and routines.
- Learn how nutrition and supplements affect strength gains and physical fitness.
- Increase confidence and interest in exercise and strength training for continued participation and improvement.

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#### 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:

- Develop and work to improve skill for safe and satisfying participation.
- Gain knowledge in archery safety, rules, scoring, equipment and terminology.
- Gain knowledge and skill in the proper use and care of equipment.
- Acquire knowledge and techniques for continued skill improvement.
- 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:

- Develop, review and improve basic and/or intermediate skills and strategies.
- Gain and improve knowledge of the game, rules, strategies, equipment, etiquette, etc.
- Acquire knowledge for continued self-improvement in skill and strategies.
- Obtain physical exercise and develop physical fitness.
- Gain sufficient skill and knowledge for continued interest, enjoyment and participation.

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#### 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:

- Gain sufficient skill and knowledge to be able to perform at a beginning level.
- Learn the rules and etiquette of fencing.
- Gain a reasonable level of fitness for fencing.
- Gain in self-confidence, discipline, sportsmanship, and enjoyment of fencing.

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#### 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:

- Develop an understanding of basic rules and proper etiquette.
- Learn about appropriate equipment and club selection.
- Learn the application of ball flight.
- Develop individual set-up/routine for addressing the ball.
- Learn the many physical aspects of the game, including but not limited to, putting, chipping, pitching, driving, and fairway, and bunker play.
- Understand swing mechanics and work to become consistent with their own swing.
- Develop an appreciation for the game as a lifelong fitness and wellness activity.

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### 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:

- Understand manifestations of stress and relaxation responses and learn how to elicit the relaxation response.
- Learn techniques of meditation.
- Learn techniques which promote meditation.
- Learn how to apply meditation and relaxation techniques to everyday life.
- Enhance flexibility, postural alignment and stress reduction.
- Have enough information about, and experience of, meditation to choose a method or methods appropriate for you.
- Be able to integrate information and insights from the class into your life outside of class and outside of formal meditation practice.

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### 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:

- Develop physical fitness and neuromuscular skill.
- Develop an understanding of carry over values and the use of leisure time.
- Develop an appreciation for physical activities.
- Increase knowledge such as rules, history, terminology, etiquette or health habits.
- Learn a series of postures and based on Yang Style Tai Ji.

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### 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:

- Perform a comprehensive yoga practice on your own.
- Integrate understandings, insights, postural alignments and stretches into your life outside of formal yoga practice.
- Understand basic yoga philosophy and practice.
- Improve postural alignment.
- Increase flexibility, respiratory, and strength functions.
- 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:

- Improve postural alignment.

- Improve flexibility, respiratory and strength functions.
- Experience stress reduction.
- Understand basic yoga philosophy and practice and how to use them for personal practice.

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### 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:

- Explain the general, physical, mental and social benefits of dancing.
- Demonstrate proper dance etiquette on and off the dance floor.
- Demonstrate proper posture and frame while dancing as a lead or follow.
- Recognize the music and rhythm of waltz, foxtrot, swing and rumba.
- Dance as a lead or follow the basic steps waltz, foxtrot, swing and rumba.
- 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:

- Explain the general, physical, mental and social benefits of dancing.
- Demonstrate proper dance etiquette on and off the dance floor.
- Demonstrate proper posture and frame while dancing as a lead or follow.
- Dance as a lead or follow principle basic steps and figures variations of salsa, rumba, merengue, cha cha and cumba.
- Incorporate Latin hip motion in basic steps and figures of salsa, rumba, merengue and cha cha.
- 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:

- Explain the general, physical, mental and social benefits of dancing.
- Demonstrate proper dance etiquette on and off the dance floor.
- Demonstrate proper posture and frame while dancing as a lead or follow.
- Dance as a lead or follow East Coast swing single- and triple-time basic steps.
- 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, the student should be able to:

- Increase knowledge and understanding of basketball rules, scoring, skills and strategy.
- Develop and execute basic individual skills associated with basketball.
- Develop and execute basic team skills and team play associated with basketball.
- Experience basketball as a fun, leisure time competitive activity.



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**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, the student should be able to:

- Learn the fundamentals of Flag Football.
- Develop individual Flag Football skills.
- Develop offensive and defensive Flag Football strategies.
- Learn the rules of the game.

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**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, the student should be able to:

- Learn the fundamentals of Soccer.
- Develop and improve individual skills.
- Develop offensive and defensive strategies.
- Learn the rules of the game.
- Learn the terminology.

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**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, the student should be able to:

- Learn the fundamentals of Ultimate Frisbee.
- Develop individual skills necessary to successfully participate in the game.
- Develop knowledge of the offensive and defensive strategy involved in the game.
- Learn and develop good sportsmanship habits.
- Learn the rules and conduct of the game.
- Improve your personal fitness level.

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**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, the student should be able to:

- Learn the fundamentals of volleyball.
- Develop individual skills necessary to successfully participate in the game.
- Develop knowledge of the offensive and defensive strategy involved in the game.
- Learn and develop good sportsmanship habits.
- Learn the rules and conduct of the game.
- Improve your personal fitness level.

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**PE 183W - Progressive Integrative Exercise**

1 Credit(s)

Students perform personalized corrective exercise programs to improve fitness in both the injured and individuals with controlled diseases. Flexibility, strength, cardiovascular endurance, nutrition and stress management principles will be covered. Must be able to exercise with minimal supervision. Repeatable up to 12 credits.

**Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Use pre and post testing measurements to identify areas of improvement throughout the quarter.
- Develop knowledge of proper breathing techniques.

- Enhance knowledge of core stabilization through appropriate form and proper recruitment of muscles.
- Develop knowledge of proper use of foam rollers for improved tissue mobility and movement.
- Perform proper warm-up, cool down and flexibility routines using various fitness equipment.
- Be able to calculate target heart rate range and explain the importance for cardiovascular endurance.
- Develop knowledge of the sympathetic and parasympathetic nervous systems and identify the importance of each system and managing for stress.
- Develop increased strength using strength-training principles for optimal health and wellness.
- To gain knowledge in improving overall movement by integrating joint movement, balance, and muscles development activities.
- To identify potential movement discrepancies while performing exercise routines.
- Provide knowledge of exercise program modifications for movement discrepancies using anatomy, biomechanics and fitness principles.
- Compare and evaluate nutritional intake to recommended governmental guidelines.
- Enhance overall health and wellness through self-evaluation of health and wellness concepts.
- Develop life-long skills to enhance overall health and wellness while living with injury and controlled diseases.

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**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:

- Improve their command of basic fencing skills, and increase their technical skill base and tactical application of those skills.
- Learn the basics of tournament rules and playing in a tournament format.
- Improve their overall fitness level.
- Gain additional discipline skills, self-confidence and enjoyment of fencing.

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**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:

- Develop physical fitness and neuromuscular skill.
- Develop an understanding of carry over values and the use of leisure time.
- Develop an appreciation for physical activities.
- Develop social compatibility.
- To increase knowledge such as rules, history, terminology, etiquette or health habits.
- Learn a series of postures and based on Yang Style Tai Ju; how to stand, move, and how to breathe.

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**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:

- Improve postural alignment.
- Increase flexibility, respiratory and strength functions.
- Practice intermediate level asanas.
- Learn the 8-limbs of classical yoga.
- Experience stress reduction.

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**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, the student should be able to:

- Increase knowledge and understanding of basketball rules, scoring, skills and strategy.
- Develop and execute advanced individual skills associated with basketball.
- Develop and execute advanced team skills and team play associated with basketball.
- Experience basketball as a fun, leisure time competitive activity.

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**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, the student should be able to:

- Develop physical fitness and neuromuscular skill.
- Develop an understanding of carry over values and the use of leisure time.
- Develop an appreciation for physical activities.
- Develop social compatibility.
- To increase knowledge such as rules, history, terminology, etiquette or health habits.
- Learn a series of postures and based on Yang Style Tai Ju; how to stand, move, and how to breathe.

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**Physical Education - Athletics**

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**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:

- Gain overall conditioning to be applied to a cross country race.
- Develop knowledge of training principles, strategies, methodology, terminology, regulations and history in the sports.
- Progressive development and improvement in specific event areas.

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**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:

- Gain overall knowledge of skills to be applied to Cross Country events.
- Develop knowledge of training principles, strategies, methodology, terminology, regulations and history in the sport.
- Progressive development and improvement in specific event areas.

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**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:

- To gain overall conditioning to be applied to a cross country race.
- To develop knowledge of training principles, strategies, methodology, terminology, regulations and history in the sports.
- Progressive development and improvement in specific event areas.

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**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:

- Gain overall knowledge of skills to be applied to Cross Country events.
- Develop knowledge of training principles, strategies, methodology, terminology, regulations and history in the sport.
- Progressive development and improvement in specific event areas.

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**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:

- Gain knowledge and understanding of volleyball conditioning.
- To develop and execute basic skills associated with volleyball conditioning.
- To provide progressive development of volleyball conditioning.
- Understand individual concepts and philosophies such as systems of play, and tactical awareness.
- Gain knowledge of rules of the game associated with volleyball.
- Understand how to analyze the fame of volleyball from a player's view.
- Understand sportsmanship.

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**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:

- Develop individual skills associated with volleyball at the varsity level.
- Gain knowledge of rules of the game associated with volleyball at the varsity level.
- Understand how to analyze the game of volleyball.
- Understand sportsmanship.
- Understand team concepts and philosophies such as formations, systems of play, and tactical awareness.
- Develop and understanding of proper nutrition needed for volleyball at the varsity or collegiate level.

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**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:

- Maintain and/or increase fitness level.
- Develop a soccer exercise plan.
- Have improved speed and agility.
- Knowledge of injury preventions through increased fitness.
- Apply improved fitness to the game.
- 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:

- Understand the principles of attacking 1v1-3v3.
- Understand the principles of defending 1v1-3v3.
- Understand the importance of attacking and defensive shape on the game.
- Learn various tactical systems i.e. 4-3-3, 4-4-2, 4-5-1.

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### 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:

- Maintain and/or increase fitness level.
- Develop a soccer exercise plan.
- Have improved speed and agility.
- Knowledge of injury preventions through increased fitness.
- Apply improved fitness to the game.
- Fitness and nutrition effects on health and stress management.

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### 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:

- Understand the principles of attacking 1v1-3v3.
- Understand the principles of defending 1v1-3v3.
- Understand the importance of attacking and defensive shape on the game.
- Learn various tactical systems i.e. 4-3-3, 4-4-2, 4-5-1.

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### 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:

- Gain knowledge and understanding of basketball skills and rules of the game.
- Develop and execute advanced skills associated with basketball.
- Provide progressive development of basketball skills.
- Provide a competitive experience for the participants.

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### 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:

- Gain knowledge and understanding of basketball skills and rules of the game.
- Develop and execute advanced skills associated with basketball.
- Provide progressive development of basketball skills.
- 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:

- Gain knowledge and understanding of basketball conditioning.
- Develop and execute basic skills associated with basketball conditioning.
- Provide progressive development of basketball conditioning.
- 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:

- Gain knowledge and understanding of basketball skills and rules of the women's game.
- Develop and execute advanced skills associated with basketball.
- Provide progressive development of basketball skills.
- Provide competitive experiences for the participants.

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### 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:

- Develop physical conditioning to be applied to a particular event(s) in Track and Field.
- Develop knowledge of specific track and field conditioning drills, including strength training programs.
- Progressive development and improvement in specific event areas.

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### 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:

- Demonstrate physical skills that can be applied to a particular event(s) in Track & Field.
- Understand specific track and field drills that promote event specific skill development.
- Show progressive development of refined motor skills that is pertinent to a particular event.

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### 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:

- To develop physical conditioning to be applied to a particular event(s) in Track and Field.
- To develop knowledge of specific track and field conditioning drills, including strength training programs.
- Progressive development and improvement in specific event areas.

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### 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:



- To develop physical conditioning to be applied to a particular event(s) in Track and Field.
- To develop knowledge of specific track and field conditioning drills, including strength training programs.
- Progressive development and improvement in specific event areas.

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### 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:

- Develop and refine techniques, fundamentals and skills necessary to compete in a collegiate baseball experience.
- Develop and understand theories, strategies involved in collegiate-level baseball.
- Develop and maintain sound conditioning skills/habits.
- Increase knowledge as it pertains to rules, history, terminology, etiquette and health habits.
- Develop physical fitness and neuromuscular skills.
- Develop an understanding of carry over value and the use of leisure time.

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### 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:

- Develop and refine basic technique, fundamentals and skills necessary to compete in an inter-collegiate baseball experience.
- Develop and understand basic theories, strategies involved in an inter-collegiate level baseball experience.
- Develop and maintain sound conditioning skills/habits.
- Develop and nurture skills as they relate to sportsmanship and integrity within a competitive environment.

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### 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:

- Gain overall conditioning to be applied to a cross country race.
- Develop knowledge of training principles, strategies, methodology, terminology, regulations and history in the sports.
- Progressive development and improvement in specific events.

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### 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:

- Gain overall knowledge of skills to be applied to Cross Country events.
- Develop knowledge of training principles, strategies, methodology, terminology, regulations and history in the sport.

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### 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:

- To gain overall conditioning to be applied to a cross country race.
- To develop knowledge of training principles, strategies, methodology, terminology, regulations and history in the sports.
- Progressive development and improvement in specific events.

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### 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:

- Gain overall knowledge of skills to be applied to Cross Country events.
- Develop knowledge of training principles, strategies, methodology, terminology, regulations and history in the sport.
- Progressive development and improvement in specific event areas.

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### 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:

- Gain knowledge and understanding of physical conditioning specific to the sport of volleyball at the varsity level.
- Gain knowledge and understanding of skills specific to the sport of volleyball at the varsity level.
- Develop knowledge of Olympic weight lifting techniques appropriate to volleyball at the varsity level.
- Understand team concepts and philosophies such as team formations, systems of play, and tactical awareness.
- Gain knowledge of rules of the game associated with volleyball at the varsity level.
- Understand how to analyze the game of volleyball from a player's view.
- Understand sportsmanship.

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### 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:

- Develop individual skills associated with volleyball at the varsity level.
- Gain knowledge of rules of the game associated with volleyball at the varsity level.
- Understand how to analyze the game of volleyball.
- Understand sportsmanship.
- Understand team concepts and philosophies such as team formations, systems of play, and tactical awareness.
- Develop and understanding of proper nutrition needed for volleyball at the varsity or collegiate level.

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### 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:

- Maintain and/or increase fitness level.
- Learn to evaluate and improve one's own fitness.
- Have improved speed and agility and learn the key components of training i.e. work vs recovery times.
- Knowledge of injury preventions through increased fitness.
- Tactical application of fitness to the game.
- Fitness and nutrition effects on health and stress management.

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**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:

- Understand the principles of attacking 1v1-3v3.
- Understand the principles of defending 1v1-3v3.
- Understand the importance of attacking and defensive shape on the game.
- Learn various tactical systems i.e. 4-3-3, 4-4-2, 4-5-1.

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**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:

- Maintain and/or increase fitness level.
- Learn to evaluate and improve one's own fitness.
- Have improved speed and agility and learn the key components of training i.e. work vs recovery times.
- Knowledge of injury preventions through increased fitness.
- Tactical application of fitness to the game.
- Fitness and nutrition effects on health and stress management.

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**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:

- Understand the principles of attacking 1v1-3v3.
- Understand the principles of defending 1v1-3v3.
- Understand the importance of attacking and defensive shape on the game.
- Learn various tactical systems i.e. 4-3-3, 4-4-2, 4-5-1.

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**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:

- Gain knowledge and understanding of basketball skills and rules of the game.
- Develop and execute advanced skills associated with basketball.
- Provide progressive development of basketball skills.
- Provide a competitive experience for the participants.

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**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:

- Gain knowledge and understanding of basketball skills and rules of the game.
- Develop and execute advanced skills associated with basketball.
- Provide progressive development of basketball skills.
- Provide a competitive experience for the participants.

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**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:

- Gain knowledge and understanding of basketball conditioning.
- Develop and execute basic skills associated with basketball conditioning.
- Provide progressive development of basketball conditioning.
- Provide enjoyable experiences for the participants.

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**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:

- Gain knowledge and understanding of basketball skills and rules of the game.
- Develop and execute advance skills associated with basketball.
- Provide progressive development of basketball skills.
- Provide competitive experience for the participants.

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**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:

- Develop physical conditioning to be applied to a particular event(s) in Track and Field.
- Develop knowledge of specific track and field conditioning drills, including strength training programs.
- Progressive development and improvement in specific event areas. Build off of Conditioning 1 training (2nd year students)

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**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:

- Demonstrate advanced physical skills that can be applied to a particular event(s) in Track & Field.
- Understand specific track and field drills that promote event specific skill development.
- Show progressive development of refined motor skills that is pertinent to a particular event.
- Compete at the NWAACC college level.

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### 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:

- To develop physical conditioning to be applied to a particular event(s) in Track and Field.
- To develop knowledge of specific track and field conditioning drills, including strength training programs.
- Progressive development and improvement in specific event areas. Build off of Conditioning 1 training (2nd year students).

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### 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:

- Demonstrate advanced physical skills that can be applied to a particular event(s) in Track & Field.
- Understand specific track and field drills that promote event specific skill development.
- To show progressive development of refined motor skills that is pertinent to a particular event.
- Compete at the NWAACC college level.

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### 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:

- Develop and refine advanced techniques, fundamentals and skills necessary to compete in a collegiate baseball experience.
- Develop and understand advanced theories, strategies involved in collegiate-level baseball.
- Develop and maintain accelerated conditioning skills/habits.
- Have an advanced increase in knowledge as it pertains to rules, history, terminology, etiquette and health habits.
- Develop advanced physical fitness and neuromuscular skills.
- Develop an advanced understanding of carry over value and the use of leisure time.

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### 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:

- Develop and refine advanced team and individual techniques,

fundamentals and necessary skills in an inter-collegiate baseball experience.

- Develop and comprehend advanced theories, team and individual strategies involved in an inter-collegiate level basic experience.
- Develop, demonstrate accelerated conditioning skills/habits.
- Develop advanced skills as they relate to sportsmanship and integrity within a competitive collegiate environment.

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## 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:

- Gain overall muscle strength and endurance.
- To develop the knowledge of basic level and advanced level exercises.
- To experience common exercise programs and routines.

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## 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. May be offered online.

**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

Upon successful completion of this course, the student should be able to:

- Develop a career development plan.
- Demonstrate the incorporation of principles of learning when educating others.
- Use technology appropriately, efficiently, and effectively for course assignments, self-assessments, and peer and instructor communication.
- Explain historical impacts and the role of APTA/OPTA on contemporary PT Practice.
- Explain education and credentialing in physical therapy.
- Describe and define interventions and expectations for the PTA in patient-client management.
- Describe and physical therapy practice patterns, the health care team and consumers of physical therapy.
- Describe the Americans with Disabilities Act and its impact on society.
- Identify opportunities for outreach to groups underserved or underrepresented in physical therapy.

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### 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. May be offered online.

**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

Upon successful completion of this course, the student should be able to:

- Identify the role of the PTA in the provision of physical therapy interventions included in this course.
- 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.
- Apply problem-solving algorithms and classification models (i.e., International Classification of Functioning, Disability, and Health) to



develop clinical reasoning for selecting, modifying, and discontinuing PT interventions included in this course.

- 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.).
- Recognize situations that require additional information, direction, or supervision from the physical therapist for PT interventions and case simulations included in this course.
- Define evidence-based practice and principles as it is used in physical therapy.
- Identify and integrate appropriate evidence based resources to support clinical decision-making and discussions throughout the course.
- Define principles of motor learning theory that are used during patient encounters to optimize movement and prevent injury.
- Describe soft tissue disorders in terms of pathological mechanisms, epidemiology, common diagnostic procedures, management, and rehabilitation.
- Describe soft tissue healing stages and their influence on selecting and applying interventions included in this course.
- Describe theory, therapeutic benefits/outcomes, and application (precautions, contraindications, and procedures) of interventions used to promote healing, functional recovery, and pain management in this course:
  - body mechanics training/proper lifting techniques.
  - positioning.
  - basic wheelchair mobility and transport.
  - transfers.
  - superficial and deep thermal agents.
  - cryotherapy.
  - electrotherapeutic agents.
  - compression therapies.
  - hydrotherapy.
  - light.
  - soft tissue mobilization.
  - passive range of motion.
- Demonstrate competence in collecting and interpreting data obtained during: a physical therapy patient encounter, specifically:
  - Relevant subjective information provided by the patient independently or with prompts.
  - Vital signs (HR, RR, BP, O2 saturation, pain, temperature); i. Standardized pain assessments.
  - Skin condition – (e.g. color, capillary refill, swelling).
  - Movement strategies – body mechanics (lifting, carrying, bending, standing).
  - Anthropometric measures related to wheelchair fitting.
  - Assistance provided during a patient transfer or movement activity (e.g., physical, equipment, cuing).
  - Level of assistance; functional independence measures (FIM).
  - Light touch sensation integrity prior to administering biophysical agents.
- 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.).
- Use proper medical format when documenting simulated patient encounters included in the course.

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### 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

Upon successful completion of this course, the student should be able to:

- Demonstrate adherence to practice standards by identifying self as “student physical therapist assistant” during instruction and examination
- Document accurately and thoroughly during patient case simulations using SOAP and accepted medical format.
- Interview patient to obtain relevant history, level of function, subjective

information, and patient-specific concerns and/or goals related to the physical therapy encounter

- Seek feedback from the supervising physical therapist on decision-making for selected interventions prior to initiating a simulated treatment session
- Identify how cultural information noted in the patient history may inform effective communication strategies during patient care
- Demonstrate appropriate draping techniques to protect patient privacy and prevent exposure during simulated patient care
- Consistently wash hands thoroughly before and after patient contact to prevent the spread of infection
- Demonstrate proper lifting mechanics/body mechanics during simulated patient care activities.
- Use principles of motor learning to improve selected gross mobility skills during a simulated patient case
- Safely perform appropriate 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.
- Safely perform appropriate wheelchair locomotion, management and training for simulated patients requiring a range of assistance.
- Apply compression for soft tissue and/or joint protection during a case simulation.
- Demonstrate safe and effective application of the following physical agents to a person with a simulated musculoskeletal or neuromuscular impairment:
  - ice massage.
  - ice pack.
  - hot pack.
  - ultrasound.
  - electrical stimulation.
- Demonstrate the safe application of selected manual therapy techniques during a simulated case:
  - passive range of motion
  - basic massage.
  - Measure vital signs (HR, RR, O2 sat, BP) accurately.
  - Measure and record:
    - patient agreement/consent to proposed interventions in the physical therapy plan of care.
    - standard vital signs at rest and as needed based on the patient response during simulated treatment.
    - pain levels before, during, and after simulated treatment.
    - skin condition before and/or after a simulated mobility, biophysical agent and compression intervention.
    - presence and/or absence of sensation prior to application of a biophysical agent.
    - appropriateness of fit for a standard wheelchair.
    - assistance levels (e.g. level of supervision, percentage physical assist) during selected simulated gross mobility activities.
  - Modify the treatment and/or intervention according to the pain response during case simulation.
- Assess the patient response to treatment as it relates to progress toward functional and measurable goals within the physical therapy plan of care during case simulation.
- Recognize and communicate the need for additional information or reassessment from the supervising physical therapist for each of the physical therapy interventions and simulated patient care activities in the course.
- Defend clinical decision-making during practice and examination by including sound knowledge of contemporary practice patterns.

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### 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. May be offered in a format with some online instruction. Course taught at Rogue Community College.

**Prerequisite:** Admission into PTA program

**Corequisite:** PTA 101

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Demonstrate adherence to practice standards by identifying self as “student physical therapist assistant” during instruction and examination.

- Document accurately and thoroughly during patient case simulations using SOAP and accepted medical format.
- Interview patient to obtain relevant history, level of function, subjective information, and patient-specific concerns and/or goals related to the physical therapy encounter.
- Seek feedback from the supervising physical therapist on decision-making for selected interventions prior to initiating a simulated treatment session.
- Identify how cultural information noted in the patient history may inform effective communication strategies during patient care.
- Demonstrate appropriate draping techniques to protect patient privacy and prevent exposure during simulated patient care.
- Consistently wash hands thoroughly before and after patient contact to prevent the spread of infection.
- Demonstrate proper lifting mechanics/body mechanics during simulated patient care activities.
- Use principles of motor learning to improve selected gross mobility skills during a simulated patient case.
- Safely perform appropriate 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.
- Safely perform appropriate wheelchair locomotion, management and training for simulated patients requiring a range of assistance.
- Apply compression for soft tissue and/or joint protection during a case simulation.
- Demonstrate safe and effective application of the following physical agents to a person with a simulated musculoskeletal or neuromuscular impairment:
  - ice massage.
  - ice pack.
  - hot pack.
  - ultrasound.
  - electrical stimulation.
- Demonstrate the safe application of selected manual therapy techniques during a simulated case:
  - passive range of motion.
  - basic massage.
  - Measure vital signs (HR, RR, O2 sat, BP) accurately.
  - Measure and record:
    - patient agreement/consent to proposed interventions in the physical therapy plan of care.
    - standard vital signs at rest and as needed based on the patient response during simulated treatment.
    - pain levels before, during, and after simulated treatment.
    - skin condition before and/or after a simulated mobility, biophysical agent and compression intervention.
    - presence and/or absence of sensation prior to application of a biophysical agent.
    - appropriateness of fit for a standard wheelchair.
    - assistance levels (e.g. level of supervision, percentage physical assist) during selected simulated gross mobility activities .
    - Modify the treatment and/or intervention according to the pain response during case simulation.
    - Assess the patient response to treatment as it relates to progress toward functional and measurable goals within the physical therapy plan of care during case simulation.
    - Recognize and communicate the need for additional information or reassessment from the supervising physical therapist for each of the physical therapy interventions and simulated patient care activities in the course.
    - Defend clinical decision-making during practice and examination by including sound knowledge of contemporary practice patterns.

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### 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. May be offered online.

**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:

- Develop effective strategies to coordinate care and prevent the spread of infection to self and others.
- Apply the International Classification of Function and Disability (ICF) when describing body system conditions and their associated effects on the movement system.
- 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.
- 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.
- 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.
- 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.
- 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).
- Identify how PTAs are agents for advocating for safety, public health and health promotion, disease prevention, and accessibility for children and adults.
- Assess the strength of related clinical research in term of validity, reliability, significance, and future practice implications.

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### 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. May be offered in a format with some online instruction.

**Prerequisite/Corequisite:** PTA 101 And PTA 101L with a grade of C or better.

**Corequisite:** PTA 103

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Demonstrate competency in universal precautions and preventative procedures that protect the health and safety of patients, self, and others.
- Demonstrate competency in implementing appropriate mobility interventions to progress endurance, aerobic capacity, airway clearance, strength, safety, and function in patients with general medical conditions.
- 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.
- Demonstrate competency in performing data collection, including tests and measures for aerobic capacity, assistive and prosthetic devices, cognition, muscle performance, posture, ventilation, respiration, and sensation.
- Develop interprofessional and patient communication skills that support safe, legal, and patient-centered physical therapy practice.

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### 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. May be offered in a format with some online instruction.

**Prerequisite/Corequisite:** PTA 101 and PTA 101LR with a grade of C or better.

**Corequisite:** PTA 103

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Demonstrate competency in universal precautions and preventative procedures that protect the health and safety of patients, self, and others.

- Demonstrate competency in implementing appropriate mobility interventions to progress endurance, aerobic capacity, airway clearance, strength, safety, and function in patients with general medical conditions.
- 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.
- Demonstrate competency in performing data collection, including tests and measures for aerobic capacity, assistive and prosthetic devices, cognition, muscle performance, posture, ventilation, respiration, and sensation.
- Develop interprofessional and patient communication skills that support safe, legal, and patient-centered physical therapy practice.
- Activities that aggravate or relieve pain, dyspnea, or other symptoms.
- Postural alignment.
- Adjust interventions within the plan of care established by the physical therapist based on patient response.
- 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.
- Instruct patients, family members, and caregivers in supportive techniques to optimize activity, prevent injury, and/or promote wellness.
- Develop effective workplace and lifelong learning strategies to promote teamwork and collaborative problem-solving.
- Provide accurate information for billing and reimbursement purposes.
- Define domestic violence including risk factors and common symptoms of abuse.

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#### 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. May be offered online.

**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:

- Describe the anatomy, physiology, and pathophysiology of skeletal system disease and disorders across the lifespan:
  - Osteoarthritis.
  - Rheumatoid arthritis.
  - Fracture.
  - Intervertebral disc pathology.
  - Facet joint pathology.
  - Hypermobility in the extremities.
  - Hypomobility in the extremities.
  - Repetitive use syndromes.
  - Osteoporosis.
  - Pregnancy-induced syndromes.
  - Post-operative musculoskeletal conditions.
- Recognize how tissue healing stage affects physical therapy plan of care implementation.
- Integrate the ICF domains and disablement models into clinical reasoning and decision-making.
- Apply motor learning principles to optimize function, activity, and wellness.
- Select interventions that demonstrate competency in implementing the physical therapy plan of care:
  - Activities of daily living.
  - Assistive/adaptive devices.
  - Body mechanics.
  - Gait training.
  - ROM (P/AA/A/R).
  - Therapeutic exercise.
  - Stabilization.
  - Stretching.
  - Strengthening.
  - Conditioning.
  - Traction.
  - Manual techniques.
  - Scar mobilization.
  - Postural training.
  - IADL training.
- Uses relevant tests and measures and data collection skills to inform clinical-decision making and effective plan of care implementation:
  - Physiological response to position and activity changes.
  - Height, weight, and limb length.
  - Signs and symptoms of misfit (assistive device, orthotic).
  - Level of assist, safety, status (e.g., weight bearing), context.
  - Standardized questionnaires, graphs, behavioral scales, or visual analog scales for pain.
  - Integumentary changes.

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#### 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. May be offered in a format with some online instruction.

**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:

- Demonstrate competency in responding appropriately to adverse or emergency situations that may be encountered in the physical therapy service.
- Demonstrate competency in reviewing the medical record for precautions or contraindications that may affect safe participation in the physical therapy plan of care.
- 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.
- Demonstrate competency in selecting and fitting the least restrictive assistive and orthotic devices to optimize participation in gait and activities of daily living.
- Demonstrate competency in gait training for multiple weight bearing and post-operative situations on level surfaces, stairs, curbs, and ramps.
- 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.
- 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.
- Demonstrate competency in identifying parameters and expected outcomes for safe mechanical traction applications in the cervical and lumbar spine.
- Demonstrate competency in safe manual traction application principles in the cervical and lumbar spine.
- Demonstrate competency in selecting and performing safe and effective soft tissue mobilization techniques in the extremities.
- 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.
- 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.

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#### 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. May be offered in a format with some online instruction. 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

Upon successful completion of this course, the student should be able to:

- Safely select and apply interventions for case simulations in arthritis.
- Safely select and apply interventions for case simulations in osteoporosis (includes IADL training).
- Safely select and apply interventions for clients with post-operative fixators (includes gait).
- Safely perform appropriate gait training using an assistive device during a simulated patient problem requiring a range of assistance.
- Measures and records leg length, including unit conversions, with a classmate.
- Safely select and apply interventions for clients with spinal disorders (pre-op, post-op and chronic; includes traction, orthoses, exercises).
- Safely select and apply interventions for client with acute and subacute fractures.
- Safely select and apply interventions for client with acute, subacute, and joint disorders (includes exercise, injury prevention, activity modification, and assistive device training).
- Integrate members of the health care team in implementing the plan of care.
- Integrate family members as indicated into implementing the treatment plan.
- Report suspected signs of physical abuse to the supervising physical therapist.
- Demonstrate the safe application of passive, active assisted, and active resistive exercises during a case-simulation for an orthopedic condition.
- Accurately set-up measure ROM before and after a PT intervention during a case simulation using a CPM.

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### 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. May be offered online.

**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

Upon successful completion of this course, the student should be able to:

- Apply knowledge of lower extremity bones, landmarks, ligaments, joints, muscles, and nerves for the lower quarter to describe normal and abnormal motion.
- Describe principles of lower quarter biomechanics including laws of motion.
- Select interventions to normalize gait mechanics based on the physical therapy plan of care, clinical evidence, and PTA scope of practice.
- Select an appropriate intervention to normalize lower quarter joints, tissue, or gross mobility based on the physical therapy plan of care, clinical evidence, and PTA scope of practice.
- Use appropriate terminology, tests, and measures when documenting and discussing the lower quarter motion within the movement system.
- Integrate appropriate evidence based resources to support clinical decision making in optimizing movement in the lower quarter.

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### 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. May be in a format with some online instruction.

**Prerequisite/Corequisite:** PTA 101 and PTA 101L with a grade of C or better.

**Corequisite:** PTA 132

### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Describe and demonstrate basic types of joints and joint movement.
- Describe and demonstrate biomechanical principles of force and center of

gravity as related to human movement.

- Demonstrate clinical observation skills of the body and describe human motion using proper terminology.
- Perform data collection including observation, anthropometric measurements, goniometry and manual muscle testing of the lower extremity.
- Demonstrate manual muscle testing and muscle length testing procedures for the lower quarter.
- Demonstrate different types of muscle contraction and movement including their relevance to clinical setting.
- Demonstrate understanding of arthrokinematic principles.
- Apply laws of motion and simple machines to human motion.
- Identify the structures, motions and functions of the lower extremity.
- Design and demonstrate exercise application for muscles of the lower extremity.
- Demonstrate use of PNF for soft tissue ROM and strengthening.
- Identify and instruct components of normal gait cycle.
- Describe major gait deviations and pathologies causing those deviations.
- Demonstrate professional behavior in the laboratory setting.
- Demonstrate clinical rationale and proper documentation of procedures performed.
- Communicate an understanding of the plan of care developed by the physical therapist to achieve short and long term goals and intended outcomes.
- Collaborate with peers for a movement analysis project involving a video, written report, and classroom presentation.

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### 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. May be in a format with some online instruction. 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, the student should be able to:

- Describe and demonstrate basic types of joints and joint movement.
- Describe and demonstrate biomechanical principles of force and center of gravity as related to human movement.
- Demonstrate clinical observation skills of the body and describe human motion using proper terminology.
- Perform data collection including observation, anthropometric measurements, goniometry and manual muscle testing of the lower extremity.
- Demonstrate manual muscle testing and muscle length testing procedures for the lower quarter.
- Demonstrate different types of muscle contraction and movement including their relevance to clinical setting.
- Demonstrate understanding of arthrokinematic principles.
- Apply laws of motion and simple machines to human motion.
- Identify the structures, motions and functions of the lower extremity.
- Design and demonstrate exercise application for muscles of the lower extremity.
- Demonstrate use of PNF for soft tissue ROM and strengthening.
- Identify and instruct components of normal gait cycle.
- Describe major gait deviations and pathologies causing those deviations.
- Demonstrate professional behavior in the laboratory setting.
- Demonstrate clinical rationale and proper documentation of procedures performed.
- Communicate an understanding of the plan of care developed by the physical therapist to achieve short and long term goals and intended outcomes.
- Collaborate with peers for a movement analysis project involving a video, written report, and classroom presentation.

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### 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. May be offered online

**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

Upon successful completion of this course, the student should be able to:

- Describe and demonstrate basic types of joints and joint movement.
- Describe and demonstrate biomechanical principles of force and center of gravity as related to human movement.
- Demonstrate clinical observation skills of the body and describe human motion using proper terminology.
- Perform data collection including observation, anthropometric measurements, goniometry and manual muscle testing of the lower extremity.
- Demonstrate manual muscle testing and muscle length testing procedures for the lower quarter.
- Demonstrate different types of muscle contraction and movement including their relevance to clinical setting.
- Demonstrate understanding of arthrokinematic principles.
- Apply laws of motion and simple machines to human motion.
- Identify the structures, motions and functions of the lower extremity.
- Design and demonstrate exercise application for muscles of the lower extremity.
- Demonstrate use of PNF for soft tissue ROM and strengthening.
- Identify and instruct components of normal gait cycle.
- Describe major gait deviations and pathologies causing those deviations.
- Demonstrate professional behavior in the laboratory setting.
- Demonstrate clinical rationale and proper documentation of procedures performed.
- Communicate an understanding of the plan of care developed by the physical therapist to achieve short and long term goals and intended outcomes.
- Collaborate with peers for a movement analysis project involving a video, written report, and classroom presentation.

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#### 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. May be offered in a format with some online instruction.

**Prerequisite:** PTA 132 and PTA 132L with a grade of C or better.

**Corequisite:** PTA 133

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Analyze normal and abnormal postural alignment and resulting stresses to the spine and surrounding structures.
- Describe and demonstrate phases and structures of respiration.
- Practice clinical observation skills and identify structures and functions of the spine and upper extremity.
- Perform data collection including observation, anthropometric measurements and goniometry of the upper quarter.
- Demonstrate manual muscle testing and muscle length testing procedures for the upper quarter.
- Demonstrate different types of muscle contraction and movement of the trunk and upper extremity including their relevance to clinical setting.
- Demonstrate understanding of arthrokinematic principles of the upper quarter.
- Identify the structures, motions and functions of the trunk and upper quarter.
- Design, demonstrate and instruct exercise application for muscles of the trunk and upper quarter.
- Demonstrate use of PNF for soft tissue ROM and strengthening.
- Recognize common compensatory strategies and substitutions through the trunk and upper quarter.
- Identify the components and many functions of the human hand.
- Demonstrate professional behavior in the laboratory setting.
- Demonstrate clinical rationale and proper documentation of procedures performed.

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#### 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. May be offered in a format with some online instruction. Course taught at Rogue Community College.

**Prerequisite/Corequisite:** PTA 132 AND PTA 132LR for a grade of C.

**Corequisite:** PTA 133

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Analyze normal and abnormal postural alignment and resulting stresses to the spine and surrounding structures.
- Describe and demonstrate phases and structures of respiration.
- Practice clinical observation skills and identify structures and functions of the spine and upper extremity.
- Perform data collection including observation, anthropometric measurements and goniometry of the upper quarter.
- Demonstrate manual muscle testing and muscle length testing procedures for the upper quarter.
- Demonstrate different types of muscle contraction and movement of the trunk and upper extremity including their relevance to clinical setting.
- Demonstrate understanding of arthrokinematic principles of the upper quarter.
- Identify the structures, motions and functions of the trunk and upper quarter.
- Design, demonstrate and instruct exercise application for muscles of the trunk and upper quarter.
- Demonstrate use of PNF for soft tissue ROM and strengthening.
- Recognize common compensatory strategies and substitutions through the trunk and upper quarter.
- Identify the components and many functions of the human hand.
- Demonstrate professional behavior in the laboratory setting.
- Demonstrate clinical rationale and proper documentation of procedures performed.

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#### 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. May be offered online.

**Prerequisite:** Admission into the PTA Program; second-year student.

**Corequisite:** PTA 203

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Identify ethical dilemmas and moral problems.
- Understand foundations in various ethical models that influence moral reasoning.
- Be able to reference key documents regarding PT scope of practice when practice act, ethical or moral decisions arise in daily PT practice.
- Understand professionalism and the importance of autonomy for physical therapists and the dependence of the PT on the PTA to model professional behavior and conduct for high quality patient care which supports PT autonomy.
- Exhibit and display professional behavior in PTA 200 on-line and traditional classroom through professional interactions with instructor and peers duplicating expected professional behavior with physical therapist supervisor and other healthcare professionals similar to the clinic/work setting.
- Define ethical models that influence moral reasoning and decision-making and provide an example of each model.
- Identify strategies that can be utilized to support patient's participation in the physical therapy plan of care including rapport.
- Understand culture and identify potential cultural barriers that impact access and rights of individuals with and without disabilities: become more culturally competent.
- Identify factors that contribute to or are barriers to participation in the plan of care as determined by the PT.
- Identify potential causes of conflict of interest in the clinical settings which impact ethical practice and reimbursement patterns.
- Identify inappropriate sexual behaviors and implement strategies to avoid

real and perceived inappropriate behavior.

- Effectively communicate mental health status to peers, supervising PT, and interdisciplinary team.
- Compose a professional resume which reflects your preparation for the workplace as a PTA.
- Analyze results from practice PTA examinations based on exam content, and identify areas for further review and study to ensure licensure exam success.
- Demonstrate improvement from drilled examination practice to mock licensing examination with study guides that have demonstrated success in preparing PTA'S for licensure examination.
- Identify areas of possible sanctions for PTA's according to the OPTLB.
- Identify how reimbursement structure may impact progression through the physical therapy plan of
- Compare physical therapy benefits for Medicare beneficiaries, a private managed care insurance plan, and an indemnity plan and discuss impacts on implementing the physical therapy plan of care.
- Demonstrate advocacy for individuals who may benefit from physical therapy through direct contact with legislators.

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### 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. May be included online.

**Prerequisite:** Admission into PTA Program; second-year student.

#### Learning Outcomes

Upon successful completion of this course, the student will:

- Interpret professionalism and the importance of autonomy for physical therapists and the dependence of the PT on the PTA to model professional behavior and conduct for high quality patient care which supports PT autonomy in the care of the geriatric population. (wk. 3, 10-11.)
- Demonstrate professional behavior in PTA 206 on-line and traditional classroom through professional interactions with instructor, mock pt. scenario's, and peers duplicating expected professional behavior with physical therapist supervisor and other healthcare professionals similar to the clinic/work setting (PPM pg. 14 – all term).
- Discuss strategies that can be utilized to support a geriatrics patient's participation in the physical therapy plan of care including rapport and optimizing health (wk. 3, 10-11).
- Analyze social norms and stigmas that impact access and rights and dignity of geriatric patients including ageism and infantilizing geriatric patients (wk. 3, 10-11).
- Discuss factors that may be part of the aging process that may contribute to or are barriers to a geriatric pt.'s participation in the plan of care as determined by the PT (wk. 3, 10-11).
- Demonstrate increased knowledge about mental health challenges not uncommon in the geriatric population specifically dementia and Alzheimer's (wk. 3, 10-11).
- Apply effective fall risk assessments, and how to integrate effective health promotion interventions within the plan of care when working with the geriatric population as directed by the physical therapist (wk. 3, 10-11).
- Analyze ways to effectively communicate pt. mental health status and behaviors related to dementia and Alzheimer's to peers, supervising PT, a patient's family, and the interdisciplinary team and learn strategies to effectively work with this population (wk. 3, 10-11).
- Discuss common narcotics and other pharmacology sometimes used by the elderly, their effects and the role of a PTA as a member of the healthcare team in monitoring the effectiveness and side-effects of medications (wk. 3).
- Select effective and safe interventions with respect to complex functional and cognitive limitations (wk.1-3, week 11).
- Discuss the role of simulating the physical environment, and PT interventions to match as able the home environment (wk. 4).
- Analyze ways to effectively communicate pt. mental health status and behaviors related to dementia and Alzheimer's to peers, supervising PT, a patient's family, and the interdisciplinary team and learn strategies to effectively work with this population (wk. 3, 10-11).
- Demonstrate a strong 'person first' vocabulary and view of the older adult, their caregivers and families and learn the high value of developing strong working relationships with the family and other support systems (all term).

- Discuss that a caregivers capabilities require ongoing assessment and often require adjustments to the POC as directed by the physical therapist (all term).
- Analyze the possible environmental factors that may affect the older adults independence and how to address and communicate these factors effectively within the healthcare team (wk. 2-11).
- Discuss, based on experiences, lecture and readings ways to instruct and educate care-givers related to pt. needs and experiences in rehab (wk. 2-11).
- Discuss the professional responsibility of the PTA in regards to pro-bono service and the needs of the specific needs of the older adult and the continuum of care (wk. 4).
- Develop an improved understanding of the limitations of PT services in a restricted healthcare marketplace with fewer resources available to serve a growing geriatric populations needs (wk. 4).
- Apply effective communication strategies when communication barriers persist. Learn about various voice and hearing enhancement equipment (Wk. 8-9).
- Gain a great appreciation for adaptive equipment, the DME vendor, and orthotist that may be involved in the care of the geriatric population (wk. 8-9).
- Discuss common pathologies affecting the older adult and how certain pathologies may affect pt. physical, and cognitive status (wk. 1).

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### 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. May be offered online.

**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:

- Interview a non-native-English-speaking student about their experiences accessing health care in the United States.
- Compare and contrast personal health care access experiences with an individual from a different cultural background.
- Identify characteristic of different cultures that impact health care decision-making.
- Research and report on contemporary issues impacting current and/or future practice of physical therapy including, but not limited to:
  - Medicare Guidelines - MDS 3.0.
  - Managed Care/Reimbursement Issues.
  - Defensible Documentation.
  - Supervision and the role of PTAs in Clinical Education.
  - Access to health care and pro bono opportunities.
  - Emerging treatment concepts.
- 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.
- Rehearse presentation of service learning project with peers and integrate feedback from peers into service learning project poster presentation.
- Discuss and identify service opportunities for the PTA student and the PTA program at Lane Community College.
- Reflect upon personal growth through clinical education series with actions for continued improvement.

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### 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. May be offered online.

**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

Upon successful completion of this course, the student should be able to:

- Interpret and analyze the interaction among multiple systems in performance of motor behaviors.
- Analyze the impact of health and fitness sustained over the lifespan on motor skill performance.



- Interpret the difference between new motor learning, as seen in a child and relearning of movement patterns, as seen in a patient with CNS dysfunction.
- Analyze the role of the PTA in the examination of patients and clients with neurological impairments referred to physical therapy.
- Select and interpret when and which neuromuscular examination procedures may be performed by the PTA.
- Discuss the categories of intervention into practice including, functional training, retraining, and impairment training.
- Differentiate between typical and atypical motor development.
- Interpret the stages and areas of motor development including motor milestones.
- Select standardized functional assessment tools and their use in assessment of patient progress and outcome.
- Analyze various pediatric diagnoses that may be encountered in physical therapy.
- Discuss how cerebral palsy influences typical development and motor control.
- Discuss the importance of positioning and normal postural alignment in optimizing neuromuscular tone and motor learning.
- Analyze the various lower extremity orthoses that may be used to help normalize tone during functional activities.
- Interpret and review basic brain and spinal cord anatomy.
- Interpret the signs and examples of developmental delay
- Interpret and analyze the various developmental disabilities including but not limited to cerebral palsy, Down syndrome, muscular dystrophy and myelodysplasia.
- Analyze the most common types of spinal cord injury and their primary sequelae.
- Discuss autonomic dysreflexia and discuss why it is a medical emergency and what the PTA should do when it occurs.
- Analyze the complications that may occur with spinal cord injury.
- Differentiate between complete and incomplete spinal cord injury.
- Analyze the motor levels and sensory neurologic levels of injury.
- Identify and discuss the purposes of physical therapy for people with spinal cord injury.
- Interpret the impact of spinal cord injury on physical, emotional, social, and psychological health.
- Discuss and execute the plan of care, for an individual with a spinal cord injury during a case simulation.
- Analyze the major causes of TBI.
- Discuss the theoretical principles underlying neuro developmental treatment, proprioceptive neuromuscular facilitation, and task oriented approaches to rehabilitation intervention.
- Analyze functions of the brain and interpret these functions as they apply to clinical findings that occur due to injury to specific portions of the brain including spasticity, rigidity, dystonia, chorea, bradykinesia and athetosis.
- Recognize the various types of CVAs.
- Identify the data collection techniques that a PTA may employ to determine a patient's progress within the PT's plan of care.
- Describe the types of lower and upper extremity orthotics, slings and support that may be used by clients with neurological conditions.
- Apply knowledge of patient/client management for the individual who has sustained a stroke or traumatic brain injury to case studies and simulations.
- Demonstrate knowledge of underlying pathology of various adult onset neurologic conditions including multiple sclerosis, Parkinson's disease, Guillain-Barre, post Polio syndrome and implement appropriate treatment program after consultation with the primary physical therapist.
- Analyze the differences between normal and abnormal righting and equilibrium reactions in the pediatric and adult populations.
- Apply knowledge of interventions for balance, equilibrium and coordination activities for patients with neurological dysfunction.
- Select functional activities and ADLs into an established plan of care for a patient with neurological dysfunction.
- Demonstrate an understanding of basic vestibular system understanding and treatment.
- Implement appropriate changes in patient treatment plan after consultation with the primary physical therapist. lecture and lab.
- Recognize the cognitive, emotional, psychological and cultural components of any given illness or disability and discuss how these factor impact patient outcome.
- Interpret signs and symptoms of psychiatric conditions, and or dementia that require further assessment from the supervising PT and the health care team.
- Analyze common psychiatric conditions and techniques for boundary

setting during treatment sessions.

- Discuss societal impacts of physical/somatic and mental illness in the health care system.

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### 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. May be offered in a format with some online instruction.

**Prerequisite:** PTA 104, PTA 104L, PTA 133, and PTA 133L with a grade of C or better.

**Corequisite:** PTA 204

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Recognize how changes in neuromuscular function, communication and information processing affects patient education, safety, discharge planning, and advocacy.
- Screen for general health status, mental function, and treatment readiness using information obtained from the medical chart and patient/family interview.
- 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.
- Demonstrate competence in selecting and applying interventions based on the physical therapist plan of care in simulated neuromuscular cases:
- Motor function (manual neuromuscular facilitation, gait, locomotion, balance).
- Therapeutic exercise.
- Functional training in self-care for home, work, community, etc.
- Aerobic endurance; e. 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.).
- Select and simulate balance interventions based on standardized balance assessment outcomes.
- Assess how selected interventions address identified impairments functional limitations and disability in patients with neuromuscular deficits.
- Apply documentation standards for common neuromuscular tests and measures (arousal and orientation, posture, sensation, tone, righting and postural reactions, endurance, balance and coordination).
- Detect gross motor milestones, fine motor milestones, and righting and equilibrium reactions in a simulated pediatric case.
- Analyze posture, sensation, movement patterns, arousal and attention in simulated adult and pediatric neuromuscular cases.
- Cite appropriate evidence to support treatment planning and interventions in simulated neuromuscular adult and pediatric cases and course discussions.
- Effectively educate others using teaching methods that are commensurate with the needs of the patient, caregiver or healthcare personnel in simulated neuromuscular cases.
- Self-assess value-based behaviors and volunteerism outcomes during development of service learning project.
- Discuss how personal values and frameworks for disability influence patient-provider interaction.

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### 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. May be offered in a format with some online instruction. 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

Upon successful completion of this course, the student should be able to:

- Recognize how changes in neuromuscular function, communication and information processing affects patient education, safety, discharge planning, and advocacy.
- Screen for general health status, mental function, and treatment readiness using information obtained from the medical chart and patient/family interview.

- 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.
- Demonstrate competence in selecting and applying interventions based on the physical therapist plan of care in simulated neuromuscular cases:
- Motor function (manual neuromuscular facilitation, gait, locomotion, balance).
- Therapeutic exercise.
- Functional training in self-care for home, work, community, etc.
- Aerobic endurance.
- 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.).
- Select and simulate balance interventions based on standardized balance assessment outcomes.
- Assess how selected interventions address identified impairments functional limitations and disability in patients with neuromuscular deficits.
- Apply documentation standards for common neuromuscular tests and measures (arousal and orientation, posture, sensation, tone, righting and postural reactions, endurance, balance and coordination).
- Detect gross motor milestones, fine motor milestones, and righting and equilibrium reactions in a simulated pediatric case.
- Analyze posture, sensation, movement patterns, arousal and attention in simulated adult and pediatric neuromuscular cases.
- Cite appropriate evidence to support treatment planning and interventions in simulated neuromuscular adult and pediatric cases and course discussions.
- Effectively educate others using teaching methods that are commensurate with the needs of the patient, caregiver or healthcare personnel in simulated neuromuscular cases.
- Self-assess value-based behaviors and volunteerism outcomes during development of service learning project.
- Discuss how personal values and frameworks for disability influence patient-provider interactions.

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#### 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. May be offered online.

**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:

- 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).
- Discuss clinical examples of selected complex medical conditions and support the discussion with relevant evidence.
- Describe physiological causes of functional losses in selected complex medical conditions.
- Explain causes for spreading and/or preventing selected medical disorders and diseases.
- Describe the purpose and considerations for specialized interventions for complex medical conditions, including:
  - lymphedema management.
  - prosthetic and gait training.
  - therapeutic exercises.
  - skin care.
  - conditioning/reconditioning.
  - positioning.
  - infection control.
  - biophysical agents.
  - joint mobilization in the elderly.
- Demonstrate appropriate intervention selection, data collection, and communication with the supervising PT during simulated complex medical cases.

- Document wound measurements using accepted clinical standards.
- Distinguish tissues and drainage commonly encountered in wound treatment.
- 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.
- Describe how to recognize and address concerns regarding signs and symptoms of substance abuse encountered during patient care.
- Consider patient education strategies in the face of fluctuating cognition to optimize engagement and adherence within the PT plan of care.

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#### 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. May be offered in a format with some online instruction.

**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:

- Demonstrate competency in managing and monitoring patient support equipment in simulated physical therapy cases with complex medical conditions.
- 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.
- Report specific ventilation, respiration, circulation, and integument responses to physical therapy interventions in patients with complex medical conditions.
- Demonstrate appropriate limb compression and manual contact to reduce impairments identified in the physical therapy plan of care that are associated with swelling disorder.
- Acknowledge how personal, pharmacological, psychological, and environmental factors influence capacity to provide appropriate physical therapy interventions and support during critical care and end-of-life.
- 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).
- Select appropriate interventions for wound management based on wound characteristics and the physical therapy plan of care.

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#### 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. May be offered in a format with some online instruction. 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:

- Demonstrate competency in managing and monitoring patient support equipment in simulated physical therapy cases with complex medical conditions.
- 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.
- Report specific ventilation, respiration, circulation, and integument responses to physical therapy interventions in patients with complex medical conditions.
- Demonstrate appropriate limb compression and manual contact to reduce impairments identified in the physical therapy plan of care that are associated with swelling disorders.
- Acknowledge how personal, pharmacological, psychological, and environmental factors influence capacity to provide appropriate physical

therapy interventions and support during critical care and end-of-life.

- 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).
- Select appropriate interventions for wound management based on wound characteristics and the physical therapy plan of care.

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## Physics

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### 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:

- Gain familiarity with a wide variety of physical phenomena involving mechanical motion and the means by which they are described and explained.
- 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.
- 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.
- 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.
- Have familiarity with the use of scientific equipment to investigate mechanical motion.
- Formulate questions to move their thinking forward concerning the subject matter of the class.
- 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.
- Be aware of possible uses and impacts of this physics knowledge.
- 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.
- 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.
- Have a greater appreciation that energy and technology have profound implications for humanity, which involve choices by society generally and scientists as well.

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### 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:

- 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.

- Correctly use elementary physics concepts regarding the above phenomena in some simple situations, and gain a significantly increased basic conceptual understanding of these phenomena.
- 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).
- 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.
- Have familiarity with the use of scientific equipment to investigate the course phenomena.
- Be able to formulate questions to move their thinking forward concerning the subject matter of the class.
- Be familiar with elementary application of basic concepts Thermodynamics, wave motion and wave phenomena, and Electricity and Magnetism.
- Be aware of possible uses and impacts of this physics knowledge.
- Converse and write about the nature of science with increased sophistication and see physics as a science, rather than a body of knowledge.
- 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.
- Have a greater appreciation that energy and technology have profound implications for humanity, which involve choices by society generally and scientists as well.

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### 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:

- 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).
- Correctly use elementary physics concepts regarding the above phenomena in some simple situations, and gain a significantly increased basic conceptual understanding of these phenomena.
- 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).
- 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.
- Have familiarity with the use of scientific equipment to investigate the course phenomena.
- Formulate questions to move their thinking forward concerning the subject matter of the class.
- Be familiar with elementary application of basic concepts of light and color and Modern Physics.
- Be aware of possible uses and impacts of this physics knowledge.
- Converse and write about the nature of science with increased sophistication and see physics as a science, rather than a body of knowledge.
- 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.)
- 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:

- Understand, construct and evaluate position, velocity, acceleration graphs, motion diagrams and kinematic equations.
- Construct and evaluate velocity difference diagrams.
- Use vectors and vector addition to represent various quantities.
- Translate from one reference frame to another.
- Understand and apply Newton's 1st Law.
- Identify forces/interactions in a situation by type and objects involved.
- Construct and evaluate free body diagrams for unfamiliar situations.
- Construct and evaluate 2nd Law equations from a FBD.
- Identify third law pairs.
- Identify direction of acceleration for uniform and non-uniform circular motion (i.e. distinguish radial from tangential acceleration).
- Construct and evaluate energy bar graphs for unfamiliar situations (includes identifying systems, identifying types of energy present and sources of positive or negative work).
- Construct and evaluate Conservation of Energy equations from energy bar charts (or directly from a situation).
- Construct and evaluate momentum bar graphs for unfamiliar situations (includes identifying systems, identifying impulses).
- Construct and evaluate Conservation of Momentum equations from momentum bar charts (or directly from a situation).
- Construct and evaluate extended free body diagrams.
- Determine torques associated with forces and pivot point.
- Construct and evaluate 2nd Law and Rotational 2nd Law equations from an extended FBD for a static situation.
- Choose coordinate systems and determine components of vectors.
- Extract information from representations.
- Construct new representations from given ones.
- Translate from one representation to another.
- Evaluate consistency of representations and modify appropriately.
- Consider different systems, coordinate systems, reference frames and methods of analysis to arrive at a solution.
- Evaluate units in an equation.
- Perform dimensional analysis on an unfamiliar system.
- Identify assumptions.
- Evaluate special cases for solving and checking problems.
- Use solutions to make predictions.
- Check solutions based on units, reasonable fit to the question.
- Use multiple representations to determine solutions.
- Use proportional reasoning to solve problems.
- Design and conduct an observational experiment.
- Propose hypotheses for the observations.
- Design and conduct a testing experiment.
- Identify the hypotheses to be tested.
- Design a reliable experiment that tests the hypothesis.
- Distinguish between a hypothesis and a prediction.
- Make a reasonable prediction based on a hypothesis.
- Identify the assumptions made in making the prediction.
- Determine specific ways in which assumptions might affect the prediction.
- Decide whether the prediction and the outcome agree/disagree.
- Make a reasonable judgment about the hypothesis.
- Revise hypotheses when necessary.
- Design and conduct an application experiment
- Identify the problem to be solved.
- Design a reliable experiment that solves the problem.

- Use available equipment to make measurements.
- Make judgments about the results of the experiment.
- Evaluate the results by means of an independent method.
- Identify the shortcomings in an experimental design and suggest specific improvements.
- Choose a productive mathematical procedure for solving the experimental problem.
- Identify assumptions made in using the mathematical procedure.
- Identify relevant assumptions.
- Determine specific ways in which assumptions might affect the results
- Propose and evaluate potential experiments.
- Evaluate assumptions in an experimental set up.
- 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:

- Understand, distinguish and apply the concepts of angular velocity and angular acceleration.
- Understand, construct and evaluate position, velocity, acceleration graphs.
- Understand, construct and evaluate motion diagrams.
- Understand, construct and evaluate kinematic equations for rotational motion.
- Understand, relate and apply the concepts of tangential and centripetal acceleration.
- Understand and Apply Newton's 1st Law for rotations.
- Construct and evaluate extended free body diagrams.
- Determine torques associated with forces and pivot point for an unfamiliar situation.
- Construct and evaluate 2nd Law and Rotational 2nd Law equations from an extended FBD for rotations about a fixed axis.
- Construct and evaluate angular momentum bar graphs for unfamiliar situations.
- (includes identifying systems, identifying impulses).
- Construct and evaluate Conservation of Angular Momentum equations from momentum bar charts (or directly from a situation).
- Understand the microscopic source of pressure.
- Use force diagrams to determine pressure of fluids as a function of depth.
- Understand and apply Archimedes' Principle.
- Understand energy bar charts as they apply to Bernoulli's Principle.
- Understand and apply Bernoulli's Principle.
- Understand and apply Poiseuille's Equation.
- Apply Newton's Laws and Energy concepts to vibrational motion.
- Relate trigonometric functions to oscillatory behavior.
- Understand the properties of waves and how they relate to mechanical properties.
- Understand and apply the Superposition Principle to beats and standing waves.
- Apply standing waves to open and closed systems that display harmonics.
- Relate trigonometric functions to wave behavior.
- Understand and apply the ray model of light using ray diagrams.
- Understand and apply the law of reflection.
- Understand and identify images and their properties.
- Understand and apply the law of refraction.
- Understand and construct ray diagrams for curved mirrors and lenses.
- Apply distance and magnification equations for curved mirrors and lenses in both single element and multiple element arrangements.
- Translate between optics equations and ray diagrams.
- Understand and apply Huygens' Principle to situations involving wave fronts.
- Apply the principle of superposition to interference effects.
- Identify and calculate path length difference in phenomenon displaying interference such as two slit, single slit, multi-slit and thin films.

- Choose coordinate systems and determine components of vectors.
- Extract information from representations.
- Construct new representations from given ones.
- Translate from one representation to another.
- Evaluate consistency of representations and modify appropriately.
- Consider different systems, coordinate systems, reference frames and methods of analysis to arrive at a solution.
- Evaluate units in an equation.
- Perform dimensional analysis on an unfamiliar system.
- Identify assumptions.
- Evaluate special cases for solving and checking problems.
- Use solutions to make predictions.
- Check solutions based on units, reasonable fit to the question.
- Use multiple representations to determine solutions.
- Use proportional reasoning to solve problems.

#### LABS

- Design and conduct an observational experiment.
- Propose hypotheses for the observations.
- Design and conduct a testing experiment.
- Identify the hypotheses to be tested.
- Design a reliable experiment that tests the hypothesis.
- Distinguish between a hypothesis and a prediction.
- Make a reasonable prediction based on a hypothesis.
- Identify the assumptions made in making the prediction.
- Determine specific ways in which assumptions might affect the prediction.
- Decide whether the prediction and the outcome agree/disagree.
- Make a reasonable judgment about the hypothesis.
- Revise hypotheses when necessary.
- Design and conduct an application experiment.
- Identify the problem to be solved.
- Design a reliable experiment that solves the problem.
- Use available equipment to make measurements.
- Make judgments about the results of the experiment.
- Evaluate the results by means of an independent method.
- Identify the shortcomings in an experimental design and suggest specific improvements.
- Choose a productive mathematical procedure for solving the experimental problem.
- Identify assumptions made in using the mathematical procedure.
- Identify relevant assumptions.
- Determine specific ways in which assumptions might affect the results.
- Propose and evaluate potential experiments.
- Evaluate assumptions in an experimental set up.
- Identify and estimate measurement errors in an experiment.

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#### 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:

- Understand charge and analyze situations in terms of how charge moves.
- Understand and apply Coulomb's Law to situations using FBDs and Newton's 2nd Law.
- Understand, construct and evaluate energy bar charts for situations involving static electricity.
- Understand and apply electric fields and voltage fields to analyze situations.
- Understand and apply the concepts of voltage, current resistance and power in electrical circuits.
- Analyze circuits in terms of series and parallel connections.
- Understand and apply Kirchoff's Laws.
- Understand magnetic fields and how they are created.
- Determine magnetic fields using Ampere's Law for special cases.
- Understand and apply the Lorentz force law for moving charges and currents.

- Understand and apply Faraday's Law and Lenz's Law to physical situations.
- Understand and explain the origins of Faraday's Law.
- Understand Einstein's postulates and the reasons for proposing them.
- Analyze situations using Einstein's postulates.
- Understand and apply the concepts of time dilation and length contraction.
- Understand, construct and evaluate spacetime diagrams from different frames of reference.
- Understand and apply Einstein's energy and momentum equations.
- Understand and explain sources of fields from different reference frames.
- Understand the historical origins of Quantum Mechanics.
- Apply ideas of wave mechanics to simple situations.
- Choose coordinate systems and determine components of vectors.
- Extract information from representations.
- Construct new representations from given ones.
- Translate from one representation to another.
- Evaluate consistency of representations and modify appropriately.
- Consider different systems, coordinate systems, reference frames and methods of analysis to arrive at a solution.
- Evaluate units in an equation.
- Perform dimensional analysis on an unfamiliar system.
- Identify assumptions.
- Evaluate special cases for solving and checking problems.
- Use solutions to make predictions.
- Check solutions based on units, reasonable fit to the question.
- Use multiple representations to determine solutions.
- Use proportional reasoning to solve problems.
- Design and conduct an observational experiment.
- Propose hypotheses for the observations.
- Design and conduct a testing experiment.
- Identify the hypotheses to be tested.
- Design a reliable experiment that tests the hypothesis.
- Distinguish between a hypothesis and a prediction.
- Make a reasonable prediction based on a hypothesis.
- Identify the assumptions made in making the prediction.
- Determine specific ways in which assumptions might affect the prediction.
- Decide whether the prediction and the outcome agree/disagree.
- \*Make a reasonable judgment about the hypothesis.
- \*Revise hypotheses when necessary.
- Design and conduct an application experiment.
- Identify the problem to be solved.
- Design a reliable experiment that solves the problem.
- Use available equipment to make measurements.
- Make judgments about the results of the experiment.
- Evaluate the results by means of an independent method.
- Identify the shortcomings in an experimental design and suggest specific improvements.
- Choose a productive mathematical procedure for solving the experimental problem.
- Identify assumptions made in using the mathematical procedure.
- Identify relevant assumptions.
- Determine specific ways in which assumptions might affect the results
- Propose and evaluate potential experiments.
- Evaluate assumptions in an experimental set up.
- Identify and estimate measurement errors in an experiment.

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#### PH 211 - General Physics with Calculus

5 Credit(s)

PH 211,2,3 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:

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.

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### PH 212 - General Physics with Calculus

5 Credit(s)

PH 212 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:

- 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.
- 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.
- 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.
- Appropriately choose and apply explanations involving: classical rotational dynamics, fluid mechanics, Special Relativity, oscillations, waves, and optics.
- 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.
- 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.
- 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.

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### 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:

- 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.
- 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.
- 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.
- Appropriately choose and apply the basic concepts and laws of Classical Electricity and Magnetism, expressed in their integral form.
- 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.
- 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.
- Appreciate that the insights provided by Classical Electricity and Magnetism are valuable and useful even though physics has developed beyond Classical Electricity and Magnetism.

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## 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:

- Identify the diversity of historical experiences, types of governmental arrangements, political cultures, and economic systems in the world, thereby also developing a better understanding of one's own political system and culture and the role and position of the United States globally.
- Define much of the basic terminology used in comparative politics and political science more broadly.
- Demonstrate critical thinking skills in comparative politics through an examination of various institutional arrangements, political cultures, economies, and specific policy debates.
- Describe 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.



- Explain the political cultures of the countries examined, comprehend the diversity political cultures globally, and how political culture impacts institutional arrangements.
- Link the history of the countries we examine to contemporary institutions, cultures, and economies.
- Comprehend the basics of political economy and development theory and experiences.
- Explain specific issues and debates for each country examined in the class (Examples: Race issues in France, Why Communism failed in the U.S.S.R., and Iran's nuclear program).
- Compare and contrast the roles and responsibilities of local, state, and federal governments within the context of the U.S. federal system.
- Analyze how social and political phenomena influence human and governmental behavior.
- Compare and contrast historical and contemporary issues at the state and local levels.
- 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.
- Develop and express political ideas and opinions through the critical evaluation of political information with respect for different points of view.
- Apply knowledge and experiences to increase appreciation for and participation in the state and local political community.

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### 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. May be offered online.

#### Learning Outcomes

After completing this course, students should be able to:

- Identify, explain, and analyze historical foundations, core concepts, theories, debates, and historical foundations for contemporary U.S. politics and government.
- Analyze how social and political phenomena influence human and governmental behavior.
- Identify and explain influences on the U.S. political system, institutions, and political culture.
- Identify, explain, and critically assess various means through which citizens and groups participate in U.S. politics.
- Explain the roles and responsibilities of individuals and/or institutions within the context of the U.S. political system.
- Develop and express political ideas and opinions through the critical evaluation of political information with respect for different points of view.
- Apply knowledge and experiences to increase appreciation for and participation in the United States' diverse political society.

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### 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. May be offered online.

#### Learning Outcomes

After completing this course, students should be able to:

- Identify, explain, and analyze historical foundations, core concepts, theories, debates, and historical foundations for contemporary U.S. politics and government.
- Analyze how social and political phenomena influence human and governmental behavior.
- Identify and explain influences on the U.S. political system, institutions, and political culture.
- Identify, explain, and critically assess various means through which citizens and groups participate in U.S. politics.
- Explain the roles and responsibilities of individuals and/or institutions within the context of the U.S. political system.
- Develop and express political ideas and opinions through the critical evaluation of political information with respect for different points of view.
- Apply knowledge and experiences to increase appreciation for and participation in the United States' diverse political society.

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### 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:

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### 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:

- Explain, analyze, and apply the core explanatory theories of international relations and identify and apply the different levels of analysis.
- Identify and assess the role of different actors, such as states, international organizations, and other non-state actors.
- Compare and contrast the diversity of historical and contemporary experiences among and between states, actors, cultures, and institutions.
- Examine the causes and consequences of conflict and cooperation in the international system.
- Identify and appraise the processes of globalization.
- Develop and express political ideas and opinions through the critical evaluation of political information with respect for different points of view.
- 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:

- 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.
- 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.
- 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.
- 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.

- 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.
- 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.
- 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.

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### **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:

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.

- 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.

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### **PS 212 - Peace and Conflict Studies: National**

4 Credit(s)

This course focuses on issues of peace and conflict at the national level. Based upon principles of social and economic justice, the course is designed to integrate theory with practice. Theoretical ways of conceptualizing peace and conflict are used to examine important aspects of United States politics. Topics vary in order to focus on important contemporary issues. Examples include the impact of militarization on social programs, the concentration of media, economic inequality in the United States, the prison industrial complex, and a variety of social and environmental justice issues.

#### **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. 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 national level.
- 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.
- 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.
- Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry. Students examine the effectiveness of the peace paradigms (Negative, Structural, Environmental, Feminist, and Integral) in producing peace by applying empirical facts to national conflicts and to areas within the United States where peace flourishes. This provides students tools to empirically evaluate the claims they hear from their own government and mainstream news.
- 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.
- Understand the diversity of human experience and thought, individually and collectively. Students learn appreciation for the diversity of peoples, religions, and cultures at the national level. This helps students consider the lived experiences of marginalized peoples and the impacts of violence, both physical and economic, on their lives. Students also learn to practice conscience and self-awareness that increases their appreciation of how their behavior impacts others and the earth.
- 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 and the domestic impacts of these policies, Economic systems and inequality, Environmental destruction, the impact of patriarchal systems on the everyday lived experiences of women and children, the development of individual and collective conscience.

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### **PS 213 - Peace and Conflict Studies: Local**

4 Credit(s)

This course focuses on issues of peace and conflict at the local level. Based upon principles of social and economic justice, the course is designed to integrate theory with practice. The focus is on social justice issues at the

local level. Topics vary in order to focus on important contemporary local issues. Local politicians and activists are invited to speak about their work and activism. Guests cover a wide variety of issues and perspective typically ranging from the mayor and the police chief, to activists involved in various social justice issues including anti-war activism, to anarchists.

### 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.
- 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 state and local level.
- 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.
- 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. At the local level students see and experience how power is being exercised in their daily lived experiences.
- Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry. Students examine the effectiveness of the peace paradigms (Negative, Structural, Environmental, Feminist, and Integral) in producing peace by applying empirical facts to local conflicts and to areas within Oregon, Lane County, and Eugene where peace flourishes. This provides students tools to empirically evaluate the claims they hear from their own government and mainstream news.
- 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.
- Understand the diversity of human experience and thought, individually and collectively. Students learn appreciation for the diversity of peoples, religions, and cultures at the local level. This helps students consider the lived experiences of marginalized peoples and the impacts of violence, both physical and economic, on their lives. Students also learn to practice conscience and self-awareness that increases their appreciation of how their behavior impacts others and the earth.
- 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 and the local impacts of these policies, Economic systems and inequality, Environmental destruction, the impact of patriarchal systems on the everyday lived experiences of women and children, the development of individual and collective conscience.

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### 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:

- 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.

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.

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### 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:

- 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.

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.

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### 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:

- 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.
- 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.
- 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 relocation.
- 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.

- 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.
- 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 place 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.
- 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 relocation.

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## Psychology

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### PSY 110 - Exploring Psychology

3 Credit(s)

A basic introduction to psychology that encourages an appreciation and understanding of the scientific approach to the study of human behavior. Topics include the biological basis of behavior, states of consciousness, human development, learning and memory, motivation and emotion, personality and psychological disorders. Learning through online videos, online activities and textbook reading. Offered online only.

#### 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. Use critical thinking skills to predict the behavior of ourselves and others in various circumstances. Understand the connection between the brain and behavior.
- 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 self and the environment in which one lives. Apply the relevant concepts to life outside the classroom.
- 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.

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### PSY 201 - General Psychology

4 Credit(s)

This course is part of a three-course offering: PSY 201, PSY 202, and PSY 203. Each course introduces you to different topics in psychology. In PSY 201, the topics covered include: history and perspectives of psychology; research methods in psychology; the neurobiological basis of behavior; sensation and perception; human development; and states of consciousness. May be offered online.

#### 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. Use critical thinking skills to predict the behavior of ourselves and others in various circumstances. Understand the connection between the brain and behavior. Teaches hypothesis testing.
- 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 self and the environment in which one lives. Apply the relevant concepts to life outside the classroom.
- 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 psychology and approaches taken to studying it.

- Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry. Teaches psychological theories and research associated with biological bases of behavior, sensation & perception, consciousness, and development. Teaches the various perspectives on psychology and approaches taken to studying it. Teaches basic descriptive and inferential statistics, and how and what they are used for.
- Utilize appropriate information literacy skills in written and oral communication. Teaches the scientific method, empirical approach to knowledge assessment. Explains hypotheses testing and data analysis. Addresses ethical issues in the use and distribution of information.
- Understand the diversity of human experience and thought, individually and collectively. Teaches basic concepts of psychology, encourages students to explore their implications. Examines the ways in which humans develop and differ.
- Apply knowledge and skills to contemporary problems and issues. Teach how principles of neurochemistry, sensation, perception, consciousness, and development work in real life. Integrate theoretical knowledge and empirical research with practical applications in the real world.

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### PSY 202 - General Psychology

4 Credit(s)

This course is part of a three-course offering: PSY 201, PSY 202, and PSY 203. Each course introduces you to different topics in psychology. In PSY 202, the topics covered include: learning, memory, cognition, emotion, and motivation. May be offered online.

#### 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. Use critical thinking skills to predict the behavior of ourselves and others in various circumstances. Understand the connection between the brain and behavior. Teaches hypothesis testing.
- 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 self and the environment in which one lives. Apply the relevant concepts to life outside the classroom.
- 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 psychology and approaches taken to studying it.
- Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry. Teaches psychological theories and research associated with biological bases of behavior, sensation & perception, consciousness, and development. Teaches the various perspectives on psychology and approaches taken to studying it.
- Utilize appropriate information literacy skills in written and oral communication. Teaches empirical approach to knowledge assessment. Addresses heuristics and biases in thinking and problem solving. Addresses ethical issues in the framing, use and distribution of information, including tests. Addresses the role of science in educating the public.
- Understand the diversity of human experience and thought, individually and collectively. Teaches basic concepts of psychology, encourages students to explore their implications. Examines the ways in which humans develop and differ.
- Apply knowledge and skills to contemporary problems and issues. Teach how principles of learning, memory, language, intelligence, and other cognitive processes, emotion and motivation, and gender work in real life. Integrate theoretical knowledge and empirical research with practical applications in the real world. Teaches decision-making, problem-solving, and heuristics. Teaches principles of learning and memory to apply to other coursework.

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### PSY 203 - General Psychology

4 Credit(s)

This course is part of a three-course offering: PSY 201, PSY 202, and PSY 203. Each course introduces you to different topics in psychology. In PSY 203, the topics covered include: personality, social psychology; stress and coping; psychological disorders and their treatment. May be offered online.

#### Learning Outcomes

Upon successful completion of this course, students should be able to:

- Demonstrate an understanding of the area of personality psychology - including the major theories that have guided personality research, the methods used to assess personality, the interactive roles of nature and

nurture in the development of personality, and the role personality traits can play as predictive factors for a wide variety of health (physical and psychological) related outcomes.

- Describe and explain the stress response, identify the different sources of stressors, discuss a variety of stress management methods, and demonstrate an understanding of the effects of stress management on improving one's physical and psychological health.
- Critically evaluate the concept abnormal behavior": (including the complex and interactive influence of social, cultural and historical factors); describe a number of psychological disorders, how they are assessed and diagnosed; and critically evaluate the various therapeutic approaches for treating disorders, taking into account the individual, gender, and cultural differences in efficacy.

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### 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. May be offered online.

#### Learning Outcomes

Upon successful completion of this course, the student will:

- 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.
- 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.
- 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.
- 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.
- 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.

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### PSY 231 - Human Sexual Behavior

4 Credit(s)

Explores the behavioral, psychological and biological components of human sexual behavior. Topics include cross-cultural comparisons, learned and developmental origins, biological systems, variations in sexual behavior, gender issues and sexual difficulties. Course emphasizes behavioral rather than health issues in human sexuality.

**Prerequisite:** PSY 201 or instructor consent.

#### Learning Outcomes

Upon successful completion of this course, the student will be able to:

- Think critically and analytically regarding past and current research in the field of human sexual behavior and how current research has changes cultural norms and beliefs regarding human sexuality.
- Understand how the nervous and endocrine systems shape and control human sexual behavior, sexual cognition, sexual difficulties and sex and gender identities.
- Understand sexuality as it evolves through the life span.
- Increase student's ability to discuss issues relating to sex and gender with their partners in an effort to express one's sexual needs, wants and difficulties in a healthy and respectful manner. In addition, students should be able to discuss sexual issues in a respectful manner within family units and with friends.
- Understand how culture defines sex and gender roles, identities and norms. Students should have a better understanding and appreciation for sexual and gender differences.

- Have an increased understanding of issues surrounding sexual abuse and trauma and how to discuss these issues with partners, family members and friends. To know where to seek help to cope with personal sexual trauma and how to support friends, family and partners cope with the results of sexual trauma.
- Understand how pornography has influenced sex and gender identity, body image, cultural norms and sexual relationships with others.
- Have a greater understanding regarding local and national laws as they relate to sexual behaviors and relationships.

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### 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:

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.

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## Reading Skills

### RD 087 - Preparatory Academic Reading

3 Credit(s)

Prerequisite: Placement test. Corequisite: EL 115R. 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.

**Prerequisite:** Placement test.

**Corequisite:** EL 115R

RD 121 - Academic Literacy

4 Credit(s)

This course teaches critical thinking, reading, and writing. Topics include strategies for reading and analyzing academic prose, the influence of experience, attitude, and belief on thinking processes; understanding the rhetorical dimensions of language; and methods of academic research as inquiry.

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## 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.

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## 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:

- Understand the role of individuals and institutions within the context of society.
- Assess different theories and concepts, and understand the distinctions between empirical and other methods of inquiry.
- Utilize appropriate information literacy skills in written and oral communication.
- Apply knowledge and skills to contemporary problems and issues.

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### 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. May be offered online or as a telecourse.

#### Learning Outcomes

Upon successful completion of this course, the student will:

- Define and apply fundamental concepts in sociology.
- Utilize the sociological imagination to recognize connections between individual experiences, social structure and processes, and social change.
- Appreciate the value of social science research methods for understanding social realities.
- Recognize the significance of social differentiation (diversity) and globalization in human group life.
- Identify social forces that contribute to issues of concern in contemporary societies.

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### 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. May be offered as a telecourse.

#### Learning Outcomes

Upon successful completion of this course, the student will:

- Demonstrate knowledge of theories and concepts used in sociology to analyze social inequality.
- Utilize empirical data to describe patterns of social inequality and social dynamics that contribute to those patterns.
- Explore how categories of difference (such as race, gender, and social class) are socially constructed and maintained.



- Consider the significance of social stratification for shaping individual life chances and perspectives.
- Engage with contemporary debates and controversies emerging from differences of gender, race, disability, sexuality, and social class.

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### **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. May be offered online or as a telecourse.

#### **Learning Outcomes**

Upon successful completion of this course, the student will:

- Utilize sociological theory and research to analyze major social institutions.
- Utilize sociological theory and research to analyze forces and dynamics of social change.
- Recognize how the structure of institutions contribute to diversity and inequality among social groups.
- Consider the significance of social structure and social change for understanding individual experiences.
- Understand aspects of globalization that contribute to issues of concern in contemporary societies.

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### **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:

- Understand how gender relates to other social categories of difference.
- Understand how individual experience is linked to and impacted by broader social contexts.
- 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.
- Understand the interrelated impact of race/ethnicity, class and gender upon women's contemporary work roles and experiences.

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### **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:

- 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
- 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
- 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
- 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.
- 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.
- 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.

- 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.

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### **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:

- Conceptualize family as a socially constructed institution.
- Demonstrate an understanding of how social forces contribute to diversity in human experiences of family, intimate relationships, reproduction, and sexuality.
- Utilize sociological analysis to identify and characterize historical changes in family, intimate relationships, reproduction, and sexuality.
- Consider the social roots of contemporary problems in families, intimate relationships, reproduction, and sexuality; and explore strategies for addressing those problems.
- Identify and evaluate research methods used in social science to investigate family, intimate relationships, reproduction, and sexuality.

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### **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. May be offered in distance learning format.

#### **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. Understand the origins and evolution of the concept "deviant" and "criminal" and how they operate in the United States.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.

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### **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:

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- Apply knowledge and skills to contemporary problems and issues. Expand your ability to think critically about contemporary issues and controversies regarding race and ethnicity.

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### 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:

- 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.
- 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.
- 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.
- 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.
- 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.
- Understand the diversity of human experience and thought, individually and collectively. Students understand the varied and contentious historical and contemporary forms of social class.
- 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.

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### 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:

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.

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### SOC 225 - Social Problems

4 Credit(s)

Analyzes contemporary social problems, including topics such as social inequality, environmental degradation, impacts of globalization, and criminalization. Examines how social conditions come to be labeled as "problems," the causes and consequences of those conditions, and how social activists and policymakers respond to social problems.

### Learning Outcomes

Upon successful completion of this course, the student will:

- Apply sociological concepts and theory to analyze contemporary social problems.
- Demonstrate awareness of problems experienced by diverse social groups in the U.S. and globally.
- Identify social causes of problems in societies, or social factors that contribute to those problems.
- Recognize the value of social science research for understanding the causes of social problems and for developing responses to those problems.
- Critically reflect on their own perspectives and behavior in regard to social problems.

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### 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:

- Apply sociological perspectives to determine the root causes, consequences, and potential solutions to environmental problems.
- Define and apply social and natural science concepts in order to critically examine socioenvironmental relations.

- Employ critical and systems thinking to address global, regional, and local environmental issues.

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## Soil Science

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### 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:

- Describe and evaluate the six major environmental functions of soil and implications for sustainability.
- Explain the five factors controlling soil development and describe how each of these factors has contributed to a soil that exists today.
- Summarize how a soil's properties affect its suitability for a variety of land-management uses.
- Assess and explain how chemical, physical and biological processes affect the function and health of soil.
- Perform calculations involving soil physical properties, water content and soil nutrient availability.
- Identify, compare and contrast soils in the landscape.
- Interpret soils related graphs, tables and maps.
- Present research findings in written graphic, and oral form.

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## Spanish

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### 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. These courses must be taken in sequence. The sequence emphasizes the development of the skills of listening, speaking, reading, writing, and culture. In Spanish 101, students will learn to converse in a variety of common everyday settings using the vocabulary and structures presented in class. Emphasis is also placed on writing, reading, listening, and learning about Hispanic cultures. Tests are administered in class. Course content is conducted entirely in Spanish.

#### Learning Outcomes

Upon successful completion of this course, students will be able to:

Communicate on very familiar topics by engaging in short, simple, and predictable exchanges. (Interpersonal Communication - Novice low/mid)

- Present basic information about self, friends, and close family members using words, phrases, and memorized expressions. (Presentational Speaking - Novice low/mid)
- Write lists and notes on familiar topics using learned phrases and memorized expression. (Presentational Writing - Novice Mid)
- Recognizes familiar words and phrases when supported by context. (Interpretive Listening - Novice Mid)
- 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)
- 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)

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### 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, everyday 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:

- 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)
- Present information about self and some other very familiar topics using a variety of words, phrases, and memorized expressions. (Presentational speaking - Novice Mid)
- Write short messages and notes on familiar topics related to everyday life. (Presentational writing - Novice High)
- 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)
- Understand the main idea of short, simple, uncomplicated texts on familiar topics. (Interpretive Reading - Novice high/intermediate low)
- 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)

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### 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, everyday 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)
- Present information about self and some other very familiar topics using a variety of words, phrases, and memorized expressions. (Presentational speaking - Novice Mid)
- Write briefly about some familiar topics by connecting simple sentences. (Presentational writing - Intermediate Low)
- 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)
- Understand short, simple texts on familiar topics. (Interpretive reading - Intermediate low)
- 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)

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### 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:

- Participate in conversations and express preference on familiar topics using simple sentences and series of sentences. (Interpersonal communication - Intermediate-low)
- Make a presentation on a variety of familiar and some researched topics using connected sentences (Presentational speaking - Intermediate-low/mid)
- Write on a wide variety of familiar topics using connected sentences.



(Presentational writing - Intermediate-low/mid)

- 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)
- Understand the main idea of short straight forward informational and fictional texts. (Interpretive reading-Intermediate-mid)
- 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).

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### 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:

- Participate in conversations and state viewpoints on familiar topics using sentences and series of sentences. (Interpersonal communication - Intermediate-mid)
- Make a presentation on a variety of familiar and researched topics using connected sentences. (Presentational speaking - intermediate-mid)
- Write on a wide variety of familiar topics using connected sentences. (Presentational writing - Intermediate-Mid)
- 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)
- Understand the main idea of short straight forward informational and fictional texts. (Interpretive reading- Intermediate-mid)
- 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)

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### 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:

- Participate in conversations sometimes involving complications and asking questions about familiar topics using sentences and strings of sentences. (Interpersonal communication - Intermediate-mid)
- 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)
- Write and state viewpoints on a wide variety of familiar topics using connected sentences. (Presentational writing - Intermediate-high)
- 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)
- Understand the main idea of texts related to everyday life and personal interests or studies. (Interpretive reading - Intermediate-mid)
- 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)

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### 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:

- Write personal, narrative, and persuasive essays while adhering to the norms of standard written Spanish.
- Give a formal presentation using an appropriate register.
- Describe and analyze different registers of Spanish used in the US and abroad.
- Describe and analyze a variety of texts from different genres, such as creative nonfiction, short stories, poetry, and journalism.
- Describe and analyze different forms of “Spanglish” in order to put non-standard forms into linguistic, cultural, and historical context.
- Connect their own personal and/or family stories to the cultural and historical contexts of immigration in the US.

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### 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 Placement into SPAN 103

#### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Identify and explain in Spanish the most common medical terms.
- Infer the meanings of more uncommon Spanish terms based on knowledge of roots, prefixes and suffixes.
- Use correct spelling and pronunciation of major medical terms in Spanish.
- Display increased cultural competence through heightened awareness of components and skills in linguistic and cultural competence, recognizing disparities in Health Care Delivery.
- Demonstrate an understanding of Spanish-speaking and/or Latino culture and reflect how cultural differences may affect interaction between patients and providers.
- Produce Spanish terms in sentences in the appropriate context.
- 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.

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## Student Leadership Development

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### 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.

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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:

- Assess and contextualize the integrity of educational systems as sites of legitimacy and neutrality.
- Be capable of re-framing their stories as Latinos in the Americas.
- Re-center their place as individuals worthy of respect and dignity.
- 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 transform the condition of the Chicano/Latino community.

**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: 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.

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**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:

- 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.

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.

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**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:

- 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.
- 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.
- 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.
- 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.

- 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.
- 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.
- 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.

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### **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, the student will:

- Understand the theory and principles of African American leadership.
- Understand and identify the "typologies" of African American leaders.
- Develop and utilize a comprehensive cultural-based leadership framework based on the coursework.
- Demonstrate practical usage of the concepts and strategies learned to affect positive social change.
- Apply concepts of "grass roots" leadership learned in this course to develop and enhance problem-solving skills.
- Apply knowledge and skill sets of "grassroots" organizational development.

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## **Sustainability**

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### **SUST 101 - Introduction to Sustainability**

3 Credit(s)

What is sustainability? Students discuss, measure and learn how to implement action. Topics include economic, ecologic and environmental literacy; history; power and privilege; basic needs of food, water and shelter; energy, transportation and development; products, purchasing, waste and recycling; governance. Features guest speakers. May be offered online.

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## **Theatre Arts**

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### **TA 121 - Introduction to Costume Design**

3 Credit(s)

Student will learn basic sewing, costume rendering and execution of a design.

#### **Learning Outcomes**

Upon successful completion of the course, students will be able to:

- Basic Sewing: Machine and hand.
- Research costume period.
- Costume rendering techniques.
- Learn dying, paint and aging of fabrics.
- Pattern layout and slash techniques.
- Complete a rendering from a fashion period.
- Build a hand painted corset.

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### **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. No prior experience required, but TA 141 Acting 1 or equivalent suggested.

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### **Learning Outcomes**

Upon successful completion of the course, students will be able to:

- Approach Shakespearean texts without fear.
- Grasp the imagery and stories in the language.
- See how directors and actors deal with performing for modern audiences.
- Evaluate varying staged interpretations.
- Demonstrate effective reading and acting of Shakespeare.

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### **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:

- Explore and strengthen physical and vocal awareness and expression in a safe and supportive environment by preparing scenes and monologues for performance.
- Engage and strengthen empathy, small group communication, and problem-solving skills during class discussion and preparing a scene for performance.
- Learn and apply acting vocabulary and analysis through scene and monologue written work and research.
- 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.

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### **TA 142 - Acting 2**

4 Credit(s)

Continuation of the Beginning Acting sequence. 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:

- 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.
- Actor's analytical approach: a. Script analysis, b. Character analysis, c. Social/cultural context, d. Discovering subtext.
- Communicating/characterization: a. Internalizing motivation, seeking objectives, b. Physicalizing character, c. Sense of discovery in character work, d. Discovering subtext.
- 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.
- Concepts of serious and comedic acting.
- Assemble and present an effective audition.

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### **TA 143 - Acting 3**

4 Credit(s)

Continuation of the Beginning Acting sequence. Continued in-depth character 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:

- 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.
- Actor's analytical approach: a. Script analysis, b. Character analysis, c. Social/cultural context, d. Discovering subtext.
- Communicating/characterization: a. Internalizing motivation, seeking objectives, b. Physicalizing character, c. Sense of discovery in character work, d. Discovering subtext.



- 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.
- Concepts of serious and comedic acting.
- Assemble and present an effective audition.

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#### TA 144 - Improv

4 Credit(s)

Students learn theater 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:

- Explore and strengthen physical and vocal awareness and expression in a safe and supportive environment during in-class exercises and performances.
- Engage and strengthen empathy, small group communication, and problem-solving skills during class discussion and performance activities.
- Learn and apply improv vocabulary and concepts by teaching improv games to fellow students.
- 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.
- 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:

- Read and create basic scenic and lighting plans.
- Communicate effectively with production staff using proper terminology.
- Have knowledge of electricity and lighting physics.
- Identify the basic construction materials employed in a theatrical shop and describe their fundamental properties.
- 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.
- Identify the basic types of lighting equipment, list their components, and describe their fundamental properties.

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#### TA 153 - Theatre Rehearsal and Performance

1-3 Credit(s)

Consent of the instructor. Designed to provide practical application of classroom theory. Should be taken by participants in a theatrical production of this department scheduled for public performance.

##### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Successfully perform in a public performance.
- Have the necessary discipline to sustain public performance.

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#### TA 227 - Stage Makeup

3 Credit(s)

Stage Makeup covers the history, purpose, and especially the technique of application of theatrical makeup. Students study the use of makeup in various theatrical media, with emphasis on stage performers.

##### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Learn basic skills needed to apply makeup for theatrical productions.
- Develop aging techniques.
- Apply fantasy and animal makeup.
- Create and apply latex scars.
- Learn character analysis.
- Have basic skills to work backstage.

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#### 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:

- Demonstrate knowledge of the general theories of characterization.
- Possess the analytical skills necessary to create a character.
- Audition with confidence in a professional manner.
- Understand how to work under a variety of conditions.
- Have a working knowledge of several acting styles.
- Know how to bring oneself to the creation of a character.

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#### 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:

- Demonstrate knowledge of the general theories of characterization.
- Possess the analytical skills necessary to create a character.
- Audition with confidence in a professional manner.
- Understand how to work under a variety of conditions.
- Have a working knowledge of several acting styles.
- Know how to bring oneself to the creation of a character.

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#### 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. No prior experience required, but TA 141 Acting 1 or equivalent suggested.

**Prerequisite:** TA 242

##### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Demonstrate knowledge of the general theories of characterization.
- Possess the analytical skills necessary to create a character.
- Audition with confidence in a professional manner.
- Understand how to work under a variety of conditions.
- Have a working knowledge of several acting styles.
- Know how to bring oneself to the creation of a character.

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#### 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 the Music, Dance, and Theatre Arts Department that is scheduled for public performance.

##### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Successfully perform in a public performance.
- Gain the necessary discipline to sustain public performance.

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#### 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. May be offered online.

##### Learning Outcomes

Upon completion of this course, students will be able to:

- 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.

- Evaluate the personal, social, and artistic strengths and weaknesses of a theatrical experience utilizing vocabulary specific to the dramatic arts.
- Identify the structural elements of dramatic literature and story.
- Identify elements of performance practices of numerous international theatrical traditions.
- Apply contemporary critical theories to dramatic literature and/or theatrical experiences.

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## Video Production

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### 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 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 105 or ART 261, and AUD 120 and FA 250.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Describe the history of electronic field production.
- Demonstrate a general knowledge of video and audio image and sound reproduction and recording theory.
- Demonstrate practical skills of electronic field production shooting and editing.
- Apply the aesthetic aspects of electronic field production to shooting and editing.

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### 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:

- Define terminology relating to computer video editing.
- Define and describe the theory of SMPTE time code editing systems.
- Maintain video and audio signal quality control in the computer edit system.
- Prepare edit decision lists for computer video editing.
- Manage edit decision lists to industry standard, either in the computer editor or in an external personal computer.
- Mix A/B video and audio signals, both concurrently and in split edits, through the computer edit system.
- Program machine operation parameters into the computer edit system.
- Follow producer's instructions in operating computer edit system.
- Operate the computer edit system to enter and store edit decisions, and operate record/play videotape recorders to perform edits.
- Edit using pre-programmed SMPTE time code edit decision list or using "park & perform" edit technique.
- Perform automatic on-line assembly edits using the computer edit system.
- Discuss in general the importance of pace and timing in computer video editing.

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## Water Conservation

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### 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.

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### 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.

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### 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.

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### 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:

- 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 MWEL0. (Model Water Efficient Landscape Ordinance).

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### 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 costs.
- 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.

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### 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.

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### 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.

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### 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.

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### WATR 215 - Integrated Water Management

4 Credit(s)

**Prerequisite:** SUST 101 and WATR 101 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:** SUST 101 and WATR 101

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### 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.

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### WATR 221 - Water Mechanical Systems

4 Credit(s)

**Prerequisite:** WATR 210. 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.

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### 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.

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### 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.

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## Watershed Science

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### 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.

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## Learning Outcomes

Upon completion the student will be able to:

- Demonstrate use of concepts and principles of ecological processes and their interdisciplinary connections that influence the practice of watershed science.
- Explain in detail the components of the hydrologic cycle, including the roles that precipitation, evapotranspiration, runoff, groundwater, infiltration, and percolation play.
- Apply standard water management approaches to several distinct watershed types, to illustrate assessment and monitoring best practices.
- Compare, and classify stream geomorphology, sediment and channel processes, flow process, flooding, watershed ecology, and other watershed processes.
- Explain and evaluate responses of streams in case studies to natural and human-caused disturbances, including short-term and longer term climate change.
- Evaluate effects of common land-use practices on watershed ecosystems, stream corridors, and ecosystem services provided by the watershed.
- Compose draft scope of work statements or management plans while working on group projects.
- Demonstrate effective teamwork, use appropriate library and information resources, and give technical briefings; simulate public talks.

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## Women's Studies

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### 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.

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### 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. Understand how gender relates to other social categories of difference. Understand how individual experience is linked to and impacted by broader social contexts.
- 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.
- 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.
- 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.
- 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.
- 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.
- Apply knowledge and skills to contemporary problems and issues. Introductory text emphasizes social action as part of knowledge acquisition.

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## Writing

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### 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. May be offered online.

**Prerequisite:** Placement by the LCC reading/writing test, instructor consent, or a passing grade in RD 087.

#### **Learning Outcomes**

Upon successful completion of this course, the student will:

- Identify parts of speech in sentences and write sentences using parts of speech appropriately.
- Identify, analyze, and write simple, compound, and complex sentences, including correct punctuation.
- Identify, analyze, and correct errors in run-ons, comma splices, and sentence fragments.

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### **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.

**Prerequisite:** A passing grade in WR 087, a passing grade (C- or better) in English as a Second Language (ESL) College Transition Writing and Grammar F and College Transition Reading F and College Transition Listening and Speaking F, or placement by the LCC Accuplacer or Accuplacer ESL, or recommendation of the instructor.

**Corequisite:** EL 113

#### **Learning Outcomes**

Upon successful completion of this course, the student should be able to:

- Within a workshop setting, demonstrate use of appropriate transitions between sentences and between paragraphs.
- Within a workshop setting, demonstrate constructive critique and revision of his/her own work and the work of others.
- Within a workshop setting, demonstrate sentence combination techniques to achieve stylistic variety.
- Within a workshop setting, recognize and correct common errors in sentence structure, punctuation, and grammar.
- Within a workshop setting, demonstrate correct use of participles, gerunds, infinitives, appositives, and parallelism.
- Recognize and use a variety of options for introductory, body, and concluding paragraphs.
- Critique constructively and revise his/her own work and the work of others.
- Demonstrate effective prewriting strategies such as choosing and narrowing a topic, brainstorming, and organizing.
- Write a fluent, unified, coherent, well-organized and adequately developed paragraph with a clear topic sentence.
- Write multi-paragraph essays with the qualities mentioned above.
- Utilize process-writing techniques to revise, edit, and re-write paragraphs and essays.
- Use various rhetorical strategies such as compare/contrast, cause/effect, persuasion, and summary effectively in paragraphs and essays.
- Use appropriate transitions between sentences and paragraphs.
- Write and correctly punctuate simple, compound, and complex sentences. Use parallel structure correctly in sentences.
- Increase and diversify English vocabulary.
- Conduct research using library resources and internet effectively.
- Write a works cited list using correct bibliographic form.

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### **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. May be offered online.

**Prerequisite:** WR 087 or a passing grade (C- or better) in English as a Second

Language (ESL) College Transition Writing and Grammar F and College Transition Reading F and College Transition Listening and Speaking F, or placement by the LCC Accuplacer or Accuplacer ESL.

**Corequisite:** EL 117

#### **Learning Outcomes**

Upon successful course completion, the student will:

- Use pre-writing skills to plan focused, well-organized paragraphs and multi-paragraph essays.
- Write unified, coherent, and adequately developed paragraphs with clear topic sentences.
- Write well-developed essays that include a thesis statement and unified, coherent, and adequately developed paragraphs with clear topic sentences.
- Recognize and use a variety of options for introductory, body, and concluding paragraphs.
- 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).
- Use appropriate transitions between sentences and between paragraphs.
- Critique constructively and revise his/her own work and the work of others.

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### **WR 105 - Writing for Scholarships**

2 Credit(s)

This course functions as a support system, encouraging you to develop your ideas and writing skills beyond the classroom. First, 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. This course focuses on prewriting, descriptive writing, organizational strategies, sentence fluency, concision, and, importantly, revision. It is not uncommon for students to rewrite their essays multiple times after starting over. We will look at scholarship essays from former WR 105 students who have earned scholarships, to define what works and to employ working techniques in current assignments. We will collaborate and consider each essay together, to determine how to communicate your personal experiences such that they inspire you and touch the lives of others. 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:

- Understand and be able to respond to Oregon Student Assistance Commission essay questions.
- Be able to write concisely and engagingly about their experiences and their professional / academic goals.
- Complete four scholarship essay.

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### **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 citation and attribution conventions.

**Prerequisite:** A letter grade of C- or better, or pass in WR 093 or WR 097, or placement test.

#### **Learning Outcomes**

Upon successful completion of this course, students will be able to:

- **Rhetorical Awareness:** Develop and practice rhetorical awareness. Recognize key rhetorical concepts; begin to apply these concepts through analysis of texts.
- **Critical Thinking, Reading, and Writing:** Develop and demonstrate critical reading strategies of college-level texts; practice critical reading as a component of the writing process. Practice the evaluation of sources provided; recognize the conversational nature of academic conversations and of research.
- **Processes:** Identify and practice stages of the writing process. Recognize that composing processes and tools are a means to discover and reconsider ideas. Experience collaborative aspects of writing processes through giving and receiving feedback.
- **Knowledge of Conventions:** Recognize and practice the conventions of

Standard Edited English. Understand the effects of genre on text structure, paragraphing, sentence structure, and word choice. Practice citation conventions.

- **Metacognition and Transfer:** Recognize that composing practices enact and impact thinking. Investigate how to transfer and apply writing knowledge to new contexts.

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### 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:** A letter grade of C- or better, or Pass, in WR 093 or WR 097, or placement test.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

##### The Writing Situation (audience & purpose):

- Understand the importance of target audience, purpose and point of view.
- Focus each writing on a unifying thesis idea that summarizes the writer's intent or position.
- Develop each writing through carefully crafted organizing patterns, clear coherence devices, and credible supporting evidence.
- Make stylistic decisions appropriate to the subject, situation, and audience.

##### Critical Thinking, Reading, and Writing:

- Have developed critical thinking skills through pre-drafting, writing, feedback from peers, and frequent revising as well as through close examination of student and professional writing.
- Understand what it means to choose words, sentences, paragraphs, and formats that serve a specific audience, situation, and communications purpose.
- Write logically constructed essays and related assignments based on varying rhetorical approaches, including inductive and deductive reasoning.
- Develop problem-solving abilities.

##### The Writing Process:

- Understand writing as a series of stages—beginning with pre-drafting and ending with proofreading.
- Work with other writers to critique and revise his/her own work and the work of others.
- Develop confidence in his/her writing voices as s/he learns strategies for communications situations.
- Assess his/her own writing strengths and weaknesses.

##### Writing Skills and Conventions:

- Express ideas clearly, concisely, and carefully in forms compatible with success in the workplace and in WR 121 (in Edited Standard Written English).
- Show competence in grammar, usage, and punctuation.
- Know and use appropriate formatting styles.
- Know how to acknowledge sources and avoid plagiarism.

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### 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:** With a grade of C- or better or pass in WR 115 or placement test.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Develop and practice rhetorical awareness.
  - Recognize key rhetorical concepts; begin to apply these concepts through analysis of texts.
  - Critical Thinking, Reading, and Writing.
- Develop and demonstrate critical reading strategies of college-level texts; practice critical reading as a component of the writing process.
- Practice the evaluation of sources provided; recognize the conversational nature of academic conversations and of research.
- Identify and practice stages of the writing process.
- Recognize that composing processes and tools are a means to discover and reconsider ideas.
- Experience collaborative aspects of writing processes through giving and receiving feedback.
- Knowledge of Conventions.
- Recognize and practice the conventions of Standard Edited English.
- Understand the effects of genre on text structure, paragraphing, sentence structure, and word choice.
- Recognize that composing practices enact and impact thinking.
- Investigate how to transfer and apply writing knowledge to new contexts.

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### WR 122 - Argument, Research and Multimodal Composition

4 Credit(s)

WR 122 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, working in multiple genres, and utilizing 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 a minimum of 1500 words, demonstrating competence in both research and academic argumentation.

**Prerequisite:** With a grade of C- or better or pass in WR 121 or WR 121\_H or placement test.

#### Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Exhibit rhetorical awareness & competence.
- Apply key rhetorical concepts through analyzing and composing a variety of texts.
- Analyze and synthesize college-level texts for specific and varied rhetorical tasks/goals.
- Engage in research as a recursive and inquiry-based process; capitalize on the communal and conversational nature of academic research in composing a variety of texts.
- Demonstrate flexible and rhetorically appropriate composing strategies.
- Provide constructive peer feedback; respond effectively to peer and instructor feedback.
- Experiment with and adapt composing processes for a variety of technologies and modalities.
- Deliberatively use the conventions of Standard Edited English to enhance meaning.
- Consistently maneuver text structure, paragraphing, sentence structure, and word choice appropriate to genre.
- Systematically and skillfully apply citation conventions.
- Reflect and document procedural knowledge gained in the areas of writing strategies.
- Transfer and apply writing knowledge to new contexts.

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### 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. May be offered online.

**Prerequisite:** With a grade of C- or better or pass in WR 122 or WR 122\_H or placement test.

## Learning Outcomes

Upon successful completion of this course, the student should be able to:

- Engage in and value a respectful and free exchange of ideas.
- Demonstrate critical thinking and reading skills:
- 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.
- Evaluate sources for authority, currency, reliability, bias, sound reasoning, validity, and adequacy.
- Research and synthesize disparate sources, weighing various conclusions based on the evidence presented in order to build a credible research-based discussion.
- Develop a thesis or claim based on the evaluation and synthesis of primary and secondary sources.
- Make appropriate and effective rhetorical choices during all stages of the writing process: invention, drafting, revising, and editing:
- Use appropriate rhetorical strategies to support an argumentative or position-based thesis/claim in a research-based paper.
- Address issues of purpose and audience, anticipating and preparing for reactions to written work by audiences outside the classroom.
- Choose appropriate language (voice, tone, style, etc.) to persuade an informed and educated reader or to assert a position taken by a writer.
- Exercise Appropriate methods of development and support:
- 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.
- Utilize an organization that will reflect the scope and nature of the thesis.
- Thoroughly develop and support the thesis with a balanced and insightful presentation of evidence.
- 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.
- Demonstrate successful use of the research and writing process:
- Use library resources (e.g., subject indexes, online databases, etc.) to locate information, recognizing that there are different resources available for different purposes/subjects.
- 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.
- Use some advanced research techniques to locate sources (e.g., subject indexes, Boolean search terms, etc.).
- Recognize the recursive nature of both research and writing.
- Effectively and correctly use accepted conventions and formatting:
- Demonstrate the ability to use Edited Standard Written English (ESWE) to address an academic audience.
- Use a writer's handbook and/or other resources with increasing sophistication for style, grammar, citation, and documentation.
- Include index, pagination, and appropriately integrated visuals into projects, as needed.

### WR 227 - Technical Writing

4 Credit(s)

Students in WR 227 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:** With a grade of C- or better or pass in WR 121 or WR 121\_H or placement test.

### Learning Outcomes

Upon successful completion of this course, students will be able to:

- Reflect on individual and professional-ethical responsibilities within an organizational context.
- Apply key rhetorical concepts through analyzing, designing, and composing a variety of deliverable documents for a professional/technical context.
- 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.
- 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).

- Plan, design, and compose deliverable documents using a variety of media and communication strategies.
- 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.
- Demonstrate appropriate, intentional, and flexible strategies for managing multi-stage, collaborative projects.
- Accurately and effectively incorporate information from a variety of sources, including visuals and other non-linguistic texts.
- Develop and adapt document design and composition strategies to meet the demands of different organizations and contexts.
- Navigate norms of format, style, citation, and other context-specific conventions.
- Thoughtfully design and articulate an approach to achieving a document's purpose and user/audience needs.
- 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/als](mailto:lanecc.edu/als)

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 203, 541.463.6180, [lanecc.edu/abse](mailto:lanecc.edu/abse)

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

### Catering

Main Campus, Building 19, Room 117, 541.463.3500, [lanecc.edu/catering](mailto:lanecc.edu/catering) or email [lanecatering@lanecc.edu](mailto:lanecatering@lanecc.edu)

Lane Catering offers full catering services delivered anywhere in Eugene/Springfield and surrounding areas with a focus on sustainable practices, menu customization, and use of local, seasonal ingredients harvested seasonally from our onsite Learning Garden.

Culinary Arts and Hospitality Management students have the opportunity to work side by side with Lane Catering's professional staff in a learning lab environment. We welcome and specialize in accommodating all dietary requirements as we make it a learning opportunity to teach our students.

### Center for Meeting and Learning

Main Campus, Building 19, Room 117, (541) 463-3500, [lanecc.edu/center](mailto:lanecc.edu/center) or email [center@lanecc.edu](mailto:center@lanecc.edu)

The Center for Meeting and Learning (CENTER) offers conference and event venues at the Main Campus in Eugene, Oregon. Renowned for exceptional customer service, sustainable event practices and local and seasonal catering offerings, the Center offers you and your guests an unrivaled event experience.

### Lane Child and Family Center

Main Campus, Building 24, Room 114, 541.463.5517, [lanecc.edu/cfe/lcfc](mailto:lanecc.edu/cfe/lcfc) or email [childcareoncampus@lanecc.edu](mailto: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/cfe/lcfc/ccampis](mailto:lanecc.edu/cfe/lcfc/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/](http://lanekids.org/preschool-promise/).



## Continuing Education

Downtown Center, 101 W. 10th Ave., Suite 119, Eugene, OR 97401, (541) 463-6100 [lanecc.edu/ce](http://lanecc.edu/ce)

Continuing Education offers hundreds of noncredit 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 offers short-term training and upgrading for a wide range of professional fields. In some cases, students can earn continuing education units, industry certification, or meet state and/or national professional examination preparation requirements. Enrollment in most courses is open to any interested person over 16 years old.

Continuing Education offers a variety of training and 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 203 and at the Main Campus, Building 11, Room 201. See English as a Second Language for more information.

The English as a Second Language (ESL) Department provides instruction for adult non-native English speakers 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 is a public radio station licensed to Lane Community College in Eugene, Oregon. With 81,000 watts of power, KLCC 89.7 FM is the most powerful public radio signal in Oregon.

KLCC serves more than 88,000 listeners each week within a 100 mile radius of Eugene. Besides our main transmitter in Eugene, we have translators in four communities throughout Western and Central Oregon (Cottage Grove, Oakridge, Riddle and Sisters), and five sister stations -- KLBR in Bend, KLFO in Florence, KLCO in Newport, KLFR in Reedsport, and KMPQ in Roseburg -- all broadcasting KLCC programming.

## Lane Community College Foundation

Main Campus, Building 19, Room 270, 541.463.5135, [lanecc.edu/foundation](http://lanecc.edu/foundation) or email [foundation@laneccfoundation.org](mailto: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 nearly 25,000 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 [lanecc.edu/foundation/scholarships](http://lanecc.edu/foundation/scholarships).

## Library

Residents of the Lane Community College District who purchase a Community Borrower card, may:

- 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 [library.lanecc.edu/circ/communityborrower](http://library.lanecc.edu/circ/communityborrower)

## 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. Senior Companions in Lane County benefit from service opportunities by participating in caregiving activities with other professionals and by building self esteem through vital community service. Learn more at [lanecc.edu/scp/about-program](http://lanecc.edu/scp/about-program)

## Small Business Development Center

Downtown Center, 101 W. 10th Ave., Ste. 304, 541.463.6200, [lanesbdc.com](http://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.

## Specialized Support Services

Specialized Support Services (S3) provides vocational training to adults with developmental/intellectual disabilities. Specialized Support Services operates as a cooperative venture between Lane Community College, the Lane County Office of Developmental Disabilities, and the State of Oregon's Seniors and Persons with Disabilities Division. Specialized Support Services offers individual and small group training to develop social, work, teamwork and communication skills for future competitive employment. Learn more at [lanecc.edu/sss](http://lanecc.edu/sss)

## 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/board](http://lanecc.edu/board).

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

Melanie Muenzer, associate vice president, Eugene, appointed April 2017 elected May 2017, term expires June 30, 2021

#### 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, term expires June 30, 2021

#### Zone 4 - Eastern part of college district

Matt Keating, creative marketing consultant, Eugene, elected May 2013, re-elected May 2017 term expires June 30, 2021

#### Zone 5 - Eastern part of college district

Chelsea Jennings, field director, Eugene, appointed July 2019, term expires June 30, 2021

#### Position 6 - At Large

Rosie Pryor, retired marketing and strategy officer, Eugene, elected May 2011, re-elected May 2015, term expires June 30, 2019, 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.
- **Martin Hanifin**, Vice President of Finance and Administration, J.D. Univ. of Virginia School of Law, M.P.A. Univ. of Oklahoma, M.A. Univ. of Virginia, B.A. Norwich Univ.
- **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 1970-85.
- 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 1965-68.

## 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:

- **Jerome Colonna**, Bend
- **Kimberly Howard**, Portland
- **Guadalupe Martinez Zapata**, Portland
- **George Russell**, Eugene
- **Bridgett Wheeler**, Coquille
- **Anthony Veliz**, Woodburn
- **Jennifer Scurlock**, Eugene
- State Department of Education administration includes:
- **Patrick Crane**, Director, Office of Community Colleges and Workforce Development, Oregon Higher Education Coordinating Commission
- **Colt Gill**, Deputy Superintendent of Public Instruction

## Lane Community College Budget Committee

The Budget Committee analyzes the administration's annual budget proposal. The 2019-2020 Budget Committee includes the Board of Education and the following members:

Amber White, term expires 2020, chief financial officer, Eugene

- Hillary Kittleson, term expires 2019, retired finance director, Eugene
- Kevin Matthews, term expires 2021, editor, Dexter
- Timothy Morris, term expires 2021, receptionist, Eugene
- Clarissa Parker, term expires 2021, education program specialist, Eugene
- Alayne Clark, term expires 2020, senior financial analyst, Eugene
- Celine Swenson Harris, term expires 2020, legislative chief of staff, Eugene

## Instructional Staff

Please contact Lane Community College Human Resources Department for a list of instructional staff. Main Campus, Building 3, 1st Floor, 541.463.5586, TDD 541.463.3999, [lanecc.edu/hr](http://lanecc.edu/hr)

## 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.





