

Catalog

2005 2006

Smart.
Smart.
Smart.



CLACKAMAS
COMMUNITY COLLEGE

Smart.

What's *Smart*?

Smart.

Smart Choice.

Choosing Clackamas to start your college education is *smart*. It means you know the advantages of a personal, high quality education that doesn't cost a fortune.

Smart Move.

Spending your freshman and sophomore year at Clackamas is *smart*. You are taught by highly qualified faculty in small classrooms, rather than graduate students in large lecture halls.

Smart Investment.

Getting started on your career at Clackamas is *smart*. The college responds quickly to employment trends and offers a variety of career and technical programs designed to put you to work.

Smart Business.

State of the art training that benefits both employers and employees is *smart*. Clackamas has many programs to grow your business and improve your bottom line.

You're *Smart*.

You are looking for programs and opportunities that will enrich your life and your career. **You picked the right place.**



DATES TO REMEMBER 2005-2006

Please check a current *Schedule of Classes* to confirm these dates.

SUMMER TERM **2005**

Classes Begin	Monday, June 20
Independence Day Holiday (College closed)	Monday, July 4
Eight-week session ends	Thursday, August 11
Eleven-week session ends	Thursday, September 1
Labor Day Holiday (College closed)	Monday, September 5

FALL TERM **2005**

Inservice Week	September 19-23
Classes begin	Monday, September 26
Veterans' Day Holiday (College closed)	Thursday, November 11
Thanksgiving Holiday (College closed)	Thurs.-Fri., November 24-25
<i>(Wednesday evening classes, beginning at 4 p.m. or later, are canceled prior to Thanksgiving.)</i>	
Finals week	December 5-10
Term ends	Saturday, December 10
Winter Holiday (College closed)	Thurs.-Sun., Dec. 23-26

WINTER TERM **2006**

New Year's Day Holiday (College closed)	Monday, January 2
Classes begin	Monday, January 9
Martin Luther King Jr. Holiday (College closed)	Monday, January 16
Skills Contest	Thursday, February 23
<i>(Day classes canceled at the Oregon City campus only. Evening classes, beginning at 4 p.m. or later, held as scheduled.)</i>	
Finals week	March 20-25
Term ends	Saturday, March 25
Spring Break	March 27-31

SPRING TERM **2006**

Classes begin	Monday, April 3
Memorial Day Observance (College closed)	Monday, May 29
Finals week	June 12-17
GED & Adult High School Diploma Graduation Ceremony	Thursday, June 15
College Certificate & Degree Graduation Ceremony	Friday, June 16
Term ends	Saturday, June 17

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Clackamas Community College complies with Title VI and VII of the Civil Rights Act of 1964, Equal Employment Act of 1965, Age Discrimination in Employment Act of 1967, Title IX of the Educational Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, the Vietnam Era Readjustment Assistance Act of 1974, the Americans with Disabilities Act of 1990, the Family Medical Leave Act of 1993, among other State and Federal Laws related to employment. Review and affirmation of college compliance will be held periodically.

Clackamas Community College does not discriminate on the basis of race, color, religion, gender, sexual orientation, marital status, age, national origin/ancestry, disability, family relationship or any other protected status in accordance with applicable law. The College's commitment to nondiscrimination applies to curriculum activity and all aspects of operation of the College.

Our Credentials

Clackamas Community College is accredited by the Northwest Commission on Colleges and Universities (NWCCU). Programs at Clackamas Community College are approved for the education of veterans.

Credits earned in lower-division courses are transferable to public four-year colleges and universities in Oregon. Accreditation documentation is available in the President's Office.

Clackamas Community College's Equal Opportunity Statement ensures that the college does not discriminate on the basis of race, color, religion, gender, sexual orientation, marital status, age, national origin/ancestry, disability, family relationship in any area, curriculum activity, or operation of the college. General inquiries about this policy should be directed to the CCC Dean of Instructional Services or to the Director of Civil Rights, Department of Education, Seattle, WA. For specific information concerning physical access problems or sign language interpreter service, contact the Director of Counseling at 503-657-6958, ext. 2213.

The information in this catalog reflects current programs, requirements, and costs as of May 2005. These items are subject to change, and Clackamas Community College reserves the right to make any necessary revisions in the information contained here without prior notice. This catalog is designed to provide assistance in program planning, but it does not constitute a legal contract between the student and the college.

Smart.

Getting Started

1. Complete an Application for Admission

General Admission

REGISTRAR'S OFFICE
ROGER ROOK HALL, 110
503-657-6958, Ext. 2263

Clackamas Community College has an open door general admission policy and welcomes all students who can benefit from the instruction offered, regardless of their educational background. Adult enrollment (18 and older) is unrestricted. Students under 18 that have not completed high school or yet obtained a GED will be asked to comply with special enrollment requirements. Please see "Under-Age Students" for additional information.

CCC's general application for admission can be found:

- on the CCC website, www.clackamas.edu
- at your high school counseling office
- at any of our campuses (Oregon City, Wilsonville or Harmony)

Application materials* can be submitted at the Enrollment Services Center in Roger Rook Hall at our Oregon City campus or at our other campus locations. They can also be mailed/faxed to:

Registrar's Office
Clackamas Community College
19600 South Molalla Avenue
Oregon City, Oregon 97045-7998
Fax: 503-722-5864

**If you have taken classes at other colleges and would like this course work reviewed for transfer credit at CCC, include official copies of your transcripts with your application for admission or ask the college you previously attended to send a copy of your official transcript to the CCC Registrar's Office. You can request an evaluation of your transfer credit by submitting a Transfer Credit Evaluation Request form to the Registrar's Office.*

Special Admissions Programs

Some of our programs require special admission processes. If you are unsure about the special admission requirements for a particular program, you can make an appointment to talk with a faculty advisor or a staff member in the Advising & Counseling Center. Please note the following special admission programs, requirements and phone extensions for additional information:

Adult High School Diploma (AHSD)/ General Educational Development (GED)

Ext. 2595

See page 202, Special Programs.

Evening and Weekend Programs

Ext. 3108

See page 204, Special Programs.

Under-Age Students (16-18)

To take high school or college classes at CCC, the following options are available:

- If you are 16 years of age or older and want to get your high school diploma or GED at Clackamas, contact the Campus Learning Center, ext. 2595.
- To take high school credit recovery classes at CCC that will transfer back to your high school, contact the Dye Learning Center, ext. 2416.
- If you are under 18 and want to take college classes while still in high school contact the Registrar's Office, ext. 2262.
- If you want to earn Advanced College Credit while still in high school, contact your high school counselor or the CCC Advanced College Credit coordinator, ext. 2657.

CCC/PSU Co-Admission

Ext. 2263

Clackamas Community College offers a co-admission program with Portland State University. Through a special admissions process, students can be admitted to both institutions as they pursue their freshman and sophomore years at CCC. Co-admitted CCC students may take up to six PSU credits each term. Library and computer lab benefits are available at both institutions. Students do not have to pay the formal PSU admission fee until they transfer their junior year. CCC/PSU co-admission information and applications are available on the CCC Oregon City campus at the Advising & Counseling Center, the Registrar's Office, or on the CCC website at www.clackamas.edu/coadmit/coadmit.htm

International Students/ Program for Intensive English (PIE)

Ext. 2263

Clackamas Community College is approved by the Department of Homeland Security (DHS) to accept qualified students from other countries. International students may be admitted to the college if they have demonstrated proficiency in English by achieving a score of 523 or better on the International TOEFL (Test of English as a Foreign Language). English as a Second Language (ESL) instruction is offered through the Program for Intensive English (PIE) for students *without* a 523 TOEFL score.

Application materials and information are available by going to the CCC web page under International Students.

Clinical Lab Assistant/Medical Assistant/ Dental Assistant

Ext. 2263

Admission to these programs is by a special application process through which students enter a one-year certificate program. Interested students are encouraged to contact the Advising & Counseling Center or the Registrar's Office for more information on specific requirements and application procedures. Applications are available at the Advising & Counseling Center, the Registrar's Office, or on the CCC web page under the *Health Sciences Department* link.

Nursing

Ext. 2263

Admission to the Nursing Program is by special admission process through which students enter a six-term/two-year program leading to an Associate of Applied Science degree. Interested students are encouraged to contact the Advising & Counseling Center or the Registrar's Office for more information on specific requirements and application procedures. Applications are available at the Advising & Counseling Center, the Registrar's Office, or on the CCC web page under the *Health Sciences Department* link.

2.

Arrange for Financial Aid

Office of Student Financial Services

ROGER ROOK HALL, 110
503-657-6958, Ext. 2745

Clackamas Community College offers a full financial aid program. In 2003-2004, the college awarded \$8.5 million in financial aid to about 2,400 students. You may apply for two kinds of financial aid:

- awards based on financial need; and
- scholarships and grants based on academic achievement, special talents or community service.

Information and applications are available in the Student Financial Services Office and on the financial aid pages on the college website. The Student Financial Services Office can also provide sample loan repayment schedules for Federal Perkins Loans, Federal Stafford Student Loans and Federal PLUS Loans.

Financial aid recipients must maintain at least a 2.0 (C) grade point average while receiving financial aid. Full-time students receiving financial aid must complete 12 or more credits per term. Students enrolled in a two-year degree program are limited to nine terms of full-time enrollment. Students enrolled in a one-year certificate program are limited to five terms of full time enrollment to complete the certificate. Work on concurrent certificates or degrees must also be completed within the time frames stated above.

FREQUENTLY-ASKED QUESTIONS:

When should I apply for admission?

We recommend that you apply at least one term in advance. The sooner your application is received, the sooner we can help you build your educational plan and keep you informed of important dates and events.

Should I apply for admission if I'm not quite sure when I will attend?

Please apply for the term that you think you will be starting your studies. If your plans change, just contact Admissions at ext. 2263 and ask to update your application to another term.

Continued

If you do not maintain a 2.0 GPA, take minimum credit requirements, or attend through 60 percent of the term while receiving federal financial aid (Federal Pell Grants, Federal Supplemental Educational Opportunity Grants, Oregon State Need Grants, Federal Work-Study, Federal Perkins Student Loans, Federal Stafford Student Loans, or Federal PLUS Loans), you may be required to repay some of the aid you've received. Clackamas follows required federal Title IV refund policies. If you've lost your financial aid eligibility and want to have it reinstated, check with the Student Financial Services Office.

The college will use your financial aid award to pay your tuition and fees. If there is money left over, the Business Office will issue you a check for that amount.

For more information about financial aid, please contact the Student Financial Services Office at ext. 2745, or write to: Student Financial Services Office, Clackamas Community College, 19600 South Molalla Avenue, Oregon City, OR 97045-7998.

How to apply:

Complete a Free Application for Federal Student Aid (FAFSA). FAFSAs are available from your high school and from the Student Financial Services Office at CCC. You may also apply on the Web at www.fafsa.ed.gov. It is important that you indicate Clackamas Community College as one of your schools of choice.

Federal & State Financial Aid Programs

FEDERAL PELL GRANTS

You may be eligible for up to \$4,050 a year (2005-06), depending on the amount of federal funding available. Awards are based on eligibility and enrollment status.

FEDERAL SUPPLEMENTAL EDUCATIONAL OPPORTUNITY GRANTS

You may be eligible for up to \$1050 a year (2005-06). Part-time students (taking 6-11 credits a term) will receive smaller grants.

OREGON STATE OPPORTUNITY GRANTS

You must be enrolled full-time (taking 12 or more credits a term) to be eligible for Oregon State Opportunity Grants. Awards are renewable for up to four years. Oregon Opportunity Grants are funded through the Oregon Student Assistance Commission. If you are not an Oregon resident, contact your home state for eligibility requirements for your home state program.

FEDERAL COLLEGE WORK-STUDY

You may be eligible to receive an award to fund a paid part-time job through the college. Jobs are available both on campus and in the community. Part-time students (taking 6-11 credits a term) receive fewer dollars than full-time students.

FEDERAL PERKINS STUDENT LOANS

You may be eligible for up to \$2,400 (2005-2006) during your first two years of college. Part-time students (taking 6-11 credits a term) will receive smaller loans. You must begin repaying the loan nine months after you drop below half-time enrollment (under six credits a term). Entrance and Exit Interview counseling sessions are required.

FEDERAL STAFFORD STUDENT LOANS

Most students are eligible to apply for Federal Stafford Loan funds. The Federal Stafford Loan is a Federally guaranteed loan. First year students (less than 45 credits completed) are eligible to borrow up to \$2,625, and second year students may borrow up to \$3,500 (Actual amount is dependent on student budget criteria.). Entrance below half-time enrollment (less than six credits per term). The Student Financial Services office provides information on our preferred lenders.

FEDERAL PARENT LOANS TO UNDERGRADUATE STUDENTS (PLUS)

Your parents may be eligible for Parent Loans to Undergraduate Students. Commercial banks and other participating lenders offer these loans. Parents may borrow the cost of education minus any financial aid.

CCC Financial Aid Programs

Ext. 2745

TUITION NEED WAIVERS

Clackamas Community College offers one-time tuition waivers each year to students who need assistance. If you're having trouble financing your education, ask the Student Financial Services Office for a tuition need waiver application.

TAX CREDITS FOR EDUCATION

HOPE & LIFETIME LEARNING TAX CREDITS

The HOPE Scholarship Tax Credit and Lifetime Learning Tax Credit (LLTC) are available to students who attend Clackamas at least half-time (six or more credits) and are enrolled in an eligible course of study. Receipt of grants, scholarships and some forms of untaxed income used to pay tuition and fees will have an impact on the amount eligible to claim as expenses.

Contact a tax preparation specialist or the IRS for clarification on eligible expenses and how to file for these two tax credits.

Scholarships

Ext. 2373

Clackamas Community College offers various scholarship opportunities. The following are available:

HIGH SCHOOL SCHOLARSHIPS

Every year the CCC Foundation offers two full-time, full year tuition scholarships and one full-time, one term scholarship through each in-district public high school. Information and applications for these scholarships are available in December in your local high school counseling center or career center.

In-district high school students who compete in the annual Clackamas Regional Skills contest are eligible for CCC scholarships. Partial, one-term tuition scholarships are awarded to the top three winners in all categories of the competition. For more information contact CCC Student Outreach, ext. 2455.

TUITION SCHOLARSHIPS

If you possess special skills or plan to participate in extracurricular activities like art, athletics, speech, journalism, student government, music or theater, you may be eligible for a tuition waiver. Contact the appropriate college department to find out how to apply.

STUDENT SCHOLARSHIPS

The CCC Foundation funds a number of scholarships for new and returning students. There is one application form to complete for all scholarships, and the application is available late January through mid-March.

PRIVATE SCHOLARSHIPS

A variety of sources offer private scholarships. These scholarships are displayed in the scholarship rack located in the Community Center.

Veterans Benefits

Ext. 2554

If you are a Veteran or Reservist, you may be eligible for educational benefits. Benefits may also be available to spouses and dependent children of veterans. You should contact the Veterans Administration or the Veterans Specialist on campus to verify your eligibility.

Students who are interested in using veterans benefits to attend school should plan on starting the necessary paperwork at least two months prior to attendance to avoid delays in receiving benefits. (All educational costs are the students' responsibility and not dependent on receipt of benefits.)

Students receiving benefits must:

- have credits for prior civilian or military training evaluated.

FREQUENTLY-ASKED QUESTIONS:

How do I apply for financial aid?

The first step is to complete the FAFSA (Free Application for Federal Student Aid). You may complete and mail the paper application, or applications may be completed online. The results of the FAFSA are used to determine your eligibility to receive aid. If you list Clackamas Community College on your FAFSA, we will electronically receive your information and contact you for further information.

Can I apply for financial aid if I am not a full-time student?

Yes, you may qualify if you are registered for six or more credits and have filed your FAFSA.

Is there financial help other than federal financial aid?

Yes. Clackamas Community College has a wide range of scholarship opportunities for students who are enrolled or planning on enrolling. Some are available for part-time students as well. The open enrollment period for each year is from the end of January to mid-March. There is an application that must be completed and returned for you to be considered. Contact the Scholarship Coordinator, ext. 2373, for more information.

There are also some one-time assistance programs to help students who have special need. Contact the Student Financial Services Office for more information.

When do I apply for financial aid?

Awards are made on a first-come, first-served basis so it is important to file your financial aid form as soon as possible after January 1.

- must meet the standards of Satisfactory Progress and maintain at least a 2.0 GPA. (Students who do not meet these guidelines will be placed on probation. If the student does not complete the second term of attendance with a 2.0 GPA, benefits will be terminated under Unsatisfactory Progress.)
- must enroll for the full credit limit on variable credit and open entry/exit classes.
- must follow term schedule and attend all scheduled class meeting times.

3.

Visit the Testing/ Assessment Center

Testing/Assessment Center

**ROGER ROOK HALL, 136
503-657-6958, EXT. 2269**

Check the web site at www.clackamas.edu/testing/
or call for testing hours.

The Testing/Assessment Center is one of the first steps for new students. To be properly placed in courses new students must have skills determined by one of the following:

PLACEMENT ASSESSMENT IN READING, WRITING AND MATH

If you have not taken the ACT or SAT and do not have previous writing and/or math courses on a college transcript you will take the placement assessment.

Check the website or phone the Testing/Assessment Center for hours.

EVALUATE ACT OR SAT SCORES

If you have taken the ACT or SAT and your scores are high enough you may be placed based on these scores. If scores are not high enough you will take the placement assessment.

- Bring a copy of your scores to the Testing/Assessment Center to be evaluated.

EVALUATE PRIOR COURSEWORK

If you have taken and passed writing or math courses at another college you may be placed based on previous coursework.

- Bring a copy of your previously attended college transcripts to the Advising & Counseling Center for recommended placements in writing and math courses at Clackamas Community College.

4.

Talk to an Advisor

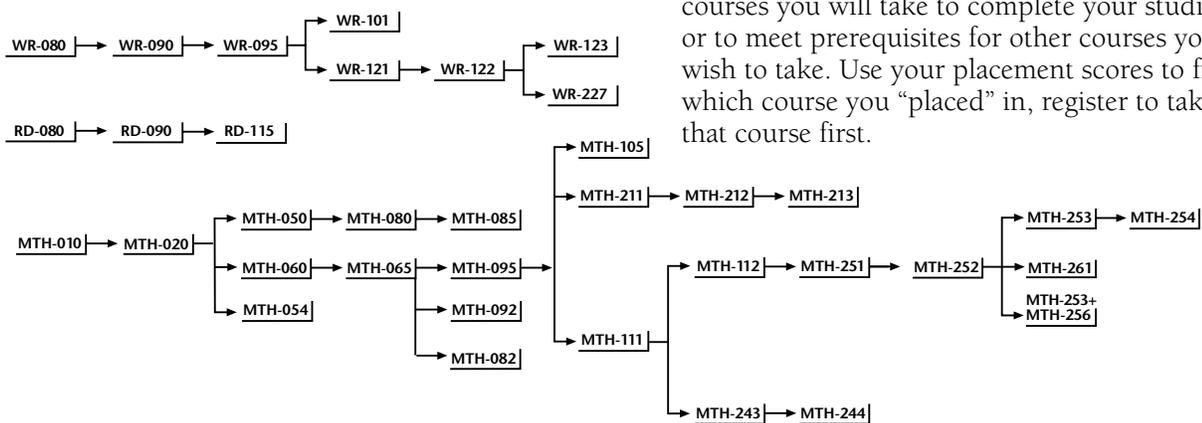
Advising & Counseling Center

**BILL BROD COMMUNITY CENTER
503-657-6958, Ext. 2213**

If you are new to Clackamas Community College and you submitted an application for admission, you will receive an invitation for a group advising session. This two-hour session will provide you with general information about the college, and the registration process. Advisors will work with you to understand degree requirements, and create a class schedule. The advising sessions are a valuable opportunity to get to know the resources of the college and the keys for successful completion of your college goals.

Once you have determined your program of study and would like additional information or assistance, you may contact a staff member in the Advising & Counseling Center, or schedule an appointment with the faculty advisor in your program area. Your faculty advisor

Prerequisites for required courses



This chart of reading, writing and math prerequisites is designed to help you map out the courses you will take to complete your studies, or to meet prerequisites for other courses you wish to take. Use your placement scores to find which course you “placed” in, register to take that course first.

can provide specific information about your program of study, as well as serve as a mentor. Your faculty advisor's name, e-mail address, extension number and office number are listed in the *Schedule of Classes* published each term.

If you plan to transfer to a four-year institution, work closely with an advisor to be sure you are fulfilling that school's transfer requirements. Catalogs for all Oregon colleges and universities are available in the Transfer Center, which is located in the Advising & Counseling Center. The transfer center contains additional information on in-state and out-of-state schools. There is also access to thousands of college catalogs via the Internet.

No matter what program you are working on, you should work with an advisor to be sure that you're taking classes that meet your goals.

5. Register for Classes

Registrar's Office

**ROGER ROOK HALL, 110
503-657-6958, EXT. 2262**

Registration is available for currently enrolled, returning and admitted students via the Web, by phone, fax/ mail-in and in person as explained in our *Schedule of Classes* each term. The *Schedule of Classes* is mailed to all households in the college district, is provided on our campuses, and is available on the Web: www.clackamas.edu

The following is a checklist for students to review prior to registering:

- Complete an Application for Admission and submit to the Registrar's Office.
- Take college placement tests or have your SAT/ACT scores evaluated for writing and math placement at the Testing/Assessment Center.
- Update your student record with the Registrar's Office if changes have occurred to your name, address, phone number and/or program of study.
- Establish an education plan by attending an advising session, meeting with a faculty advisor or a staff member in the Advising & Counseling Center.
- Review a current *Schedule of Classes* to select courses and become familiar with important dates, policies and procedures.
- Complete a registration form or registration worksheet with the courses you have selected.

- Register via the Web, by phone, mail, fax, or in person.
- Make arrangements to pay tuition and fees with the Cashier's Office.

Registration assistance is available at the Enrollment Services Center in Roger Rook Hall, by calling the Registrar's Office at 503-657-6958 ext. 2262, or by contacting us at registrar@clackamas.edu

6. Pay for Classes

Student Accounts Office

**ROGER ROOK HALL, 110
503-657-6958, EXT. 2253**

2004-2005 Tuition and Fees

Tuition and fee rates, as well as payment options information can be found in a current copy of the *Schedule of Classes*. Please note that tuition and fee rates are subject to change without prior notice.

	Tuition	General fee*
In-state students OR/CA/ID/NV/WA**:		
1-15 billing credits	\$56/credit	\$4/credit
15-18 billing credits	\$840	\$60
Above 18 billing credits	\$56/credit	\$4/credit

**Out-of-state and international students
(except California, Idaho, Nevada and Washington):**

1-15 billing credits	\$194/credit	\$4/credit
15-18 billing credits	\$2910	\$60
Above 18 billing credits	\$194/credit	\$4/credit

Other fees

Official transcript	\$5/copy
Late payment fee***	\$25
Nonrefundable third party billing fee	\$15
Returned bank item	\$25

Certain classes have special fees in addition to tuition and general fee. These are listed in the "Course Fee" column in the credit course listing.

**The general fee supports many CCC student activities including athletics, child care, new technology and student government.*

***In-state student: American citizen, immigrant or permanent resident of Oregon, California, Idaho, Nevada, or Washington.*

**** Late fees are assessed on any outstanding balance on the second, sixth and tenth Friday of the term.*

Continued

Factors That Determine Your Tuition

IN-STATE TUITION

To qualify as an in-state student for tuition purposes, you must be an American citizen, immigrant, refugee or permanent resident of Oregon, California, Idaho, Nevada or Washington and have resided there 90 days prior to the first day of class.

OUT-OF-STATE TUITION

You are an out-of-state student for tuition purposes if your permanent residence is outside the states of Oregon, California, Idaho, Nevada or Washington or you are an international student/visitor.

You are an international student if you are a citizen of another country and require an I-20 to attend college. (International students do not become residents, regardless of the length of their stay.)

SENIOR CITIZEN TUITION BENEFIT

If you are 62 years of age or older before the start date of the term, you are eligible for Gold Card status. Once your student record reflects your gold card status, tuition will be charged at the rate of 1/2 of the in-state rate for all CCC sponsored credits classes (fees excluded). Tuition and fee charges must be paid on or before the second Friday of the term to avoid late payment fees. Fees may not be deferred, however, tuition may be paid in installments (See *Paying in Installments* in the *Schedule of Classes*.) Contact the Student Accounts Office for procedures to follow. Gold Card holders are also entitled to free admission to many college special events and athletic activities. For community education Gold Card tuition benefit policies, see individual Community School listings in the *Schedule of Classes*.

Note: The Senior Citizen Tuition Benefit does not waive any fees associated with courses.

Refund Policy

You may be entitled to a refund for classes that you have officially dropped according to the following refund schedule:

- **Classes scheduled to meet 2 weeks or less:**
Add/Drop request must be filed before the beginning of class.
- **Classes scheduled to meet 3-4 weeks:**
Add/Drop request must be filed during the first week of class.
- **Classes scheduled to meet 5 weeks or more:**
Add/Drop request must be filed during the first two weeks of the class.

Add/Drop requests are processed via the official college registration request form, Web, or Telephone Registration Systems. Eligibility for a refund is determined by the date that your official request is received. Ceasing to attend class or verbal notification does not constitute an official drop. This refund policy is in effect for all classes, seminars and workshops. If you have questions, contact the Student Accounts Office at ext. 2253. You can also refer to the *Schedule of Classes* for additional information.

Canceled Class

If your class has been canceled you will be notified and officially dropped. Your tuition and fees for this class will be adjusted appropriately.

FREQUENTLY-ASKED QUESTIONS:

How do I get advice about course offerings, degree programs and career opportunities?

Come by the Advising & Counseling Center in the CCC Community Center and you can get advice and information to help you plan your educational experience. You can also call ext. 2213 to make an appointment or have questions answered.

Can I find help in choosing a career and/or program of study?

If you haven't decided on your program of study, make an appointment with a counselor to develop an educational and career plan. Contact the Advising & Counseling Center at ext. 2213 to make an appointment.

How do I find out who my faculty advisor is and where I can reach them?

Faculty advisors' names, areas of expertise, extension numbers, e-mail addresses and room numbers are located in the registration information section of the *Schedule of Classes* which is published each term.

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Degrees, Certificates & Approved Courses

Degrees, Certificates & Approved Courses

Clackamas Community College has been approved by the Oregon State Board of Education to offer Associate (two year) degrees and Certificates of Completion (one year or less). Requirements for completing degrees and certificates have been determined by CCC, in accordance with the Oregon Community College Board of Directors, the State Board of Education criteria and the accreditation requirements of the Northwest Commission on Colleges and Universities. All courses used to fulfill a requirement in an associate degree or certificate of completion must be “college level”. College level course work may include professional technical education and/or other courses that exceed basic skills, workplace readiness, and fundamental technical skills. CCC offers four associate degrees:

ASSOCIATE OF ARTS OREGON TRANSFER • ASSOCIATE OF SCIENCE OREGON TRANSFER - BUSINESS
ASSOCIATE OF GENERAL STUDIES • ASSOCIATE OF APPLIED SCIENCE

Certificates of Completion are also offered in a variety of occupational content areas.

Associate of Arts Oregon Transfer Degree (AAOT)

The AAOT is a two year degree that has been designed for the student intending to transfer to a four year college or university and pursuing upper division baccalaureate courses. CCC students who have earned an AAOT degree will be eligible for junior standing for the purposes of registration at any of the schools currently part of the Oregon University System (OUS). These schools include the University of Oregon, Oregon Institute of Technology, Oregon State University, Portland State University, Western Oregon University, Eastern Oregon University and Southern Oregon University. General requirements for obtaining the AAOT from CCC are as follows:

- Earn a minimum of 90 credits of college level course work numbered 100 and above
- Complete a distribution of recognized general education courses (see the AAOT worksheet/student planner)
- Establish a cumulative 2.0 GPA at CCC
- Establish residency by earning a minimum of 24 credits at CCC.

See pages 15 & 16 for the AAOT worksheet/student planner and additional information.

Associate of Science Oregon Transfer Degree - Business (ASOT)

The Associate of Science Oregon Transfer - Business degree is a two year program designed for the student intending to transfer to a four year college or university within the Oregon University System and is pursuing upper division baccalaureate courses in Business. CCC students who have earned the ASOT - Business degree and met the transfer institution's lower-division general education degree requirements will be eligible for junior standing for the purposes of registration. General requirements for obtaining the ASOT-Business degree from CCC are as follows:

- Earn a minimum of 90 credits of college level course work numbered 100 and above

- Complete a core of recognized general education courses in Writing, Oral Communication/Rhetoric, Mathematics and Computer Applications
- Complete distribution course requirements in Arts and Letters, Social Sciences and Science
- Complete Business-Specific requirements
- Establish a cumulative 2.0 GPA at CCC
- Establish residency by earning a minimum of 24 credits at CCC

See pages 18 & 19 for the ASOT-Business Degree worksheet/student planner for specific requirements and additional information. It is strongly recommended that students contact the specific OUS campus' Business school early in the first year of their ASOT-Business program to be advised about additional requirements and procedures for admission consideration to the OUS institution and Business school.

Associate of General Studies (AGS)

The Associate of General Studies is a two year degree designed to provide flexibility and uses a variety of college level course work to meet degree requirements. Students are encouraged to work closely with an academic advisor if they are planning to transfer to a four year college or university upon completion of the AGS degree. General requirements for obtaining the AGS from CCC are as follows:

- Earn a minimum of 90 credits of college-level course work
- Complete related instruction course work from: communication, computation, human relations and physical education/health (see the AGS worksheet/student planner and additional information on pages 17 & 20)
- Establish a cumulative 2.0 GPA at CCC
- Establish residency by earning a minimum of 24 credits at CCC
- Satisfy a computer literacy requirement (see page 21 for a list of approved courses)

Student Guide 2005-2006
Associate of Arts Oregon Transfer Degree (AAOT)

Requirements	Courses
<i>Writing (8 credits)</i>	WR-121, 122, 123 or 227 (Must have "C" grade or better)
<i>Oral Communication/Rhetoric (3 credits)</i>	SP-111 or SP-112 (Must have "C" grade or better)
<i>Mathematics (4 credits)</i>	MTH-105, 111 or higher (Must have "C" grade or better)
<i>Health & Physical Education (3 credits)</i>	Any combination of courses with a prefix of HPE, HE, PE
Must equal a minimum of 10 credits from at least 2 disciplines	<i>Arts & Letters</i> <i>(Courses used in this area must be at least 3 credits.)</i> GENERAL EDUCATION DISTRIBUTION AREA
Must equal a minimum of 15 credits from at least 2 disciplines	<i>Social Science</i> <i>(Courses used in this area must be at least 3 credits.)</i> GENERAL EDUCATION DISTRIBUTION AREA
Must equal a combined minimum of 15 credits	<i>Science/Math/Computer Science</i> <i>(Courses used in this area must be at least 3 credits.)</i> GENERAL EDUCATION DISTRIBUTION AREA
<i>Elective Courses</i> Combined with above must equal 90 credits total	Other courses numbered 100 or above may be used in this area, which may include up to 12 credits of professional/technical courses. Please refer to the Professional/Technical pages 23-62 for a listing of courses that may be included in the 12 credits mentioned above.

Note: Placement in RD-115 and/or WR-121 is recommended for courses on this page and in some cases, placement in MTH-105 or MTH-111 may also be recommended. See course descriptions.

Note: All courses must be 100 level or higher. Courses numbered 199, 280, and 299 can only be used in the electives areas. No course may be used to satisfy more than one requirement or distribution area.

To reach any college office, call 503-657-6958 and dial the extension you want. (Hearing-impaired TTY/TDD 503-650-6649)

Student Planner Worksheet 2005-2006
Associate of Arts Oregon Transfer Degree (AAOT)

This guide is to be used for educational planning/advising purposes only.

Requirements	Credits Required	CCC Courses Completed	Transferred Courses	Credits Earned	Credits Needed
<i>Writing</i> WR-121, 122, 123 or 227 (Must complete with a "C" grade or better)	8				
<i>Oral Communications/Rhetoric</i> SP-111 or SP-112 (Must complete with a "C" grade or better)	3				
<i>Mathematics</i> MTH-105, 111 or higher (Must complete with a "C" grade or better)	4				
<i>Health & Physical Education</i>	3				
<i>Arts & Letters*</i> Select a minimum of 10 credits from at least two disciplines.	10				
<i>Social Science*</i> Select a minimum of 15 credits from at least two disciplines.	15				
<i>Science/Math/Computer Science*</i> Select a minimum of 15 credits including 3 laboratory courses totaling at least 12 credits in biological or physical sciences.	15				
<i>Elective Courses</i> (May include up to 12 credits of professional/technical courses.)	<i>will vary</i>				
	TOTALS				

(Total minimum of 90 credits required.)

Additional Graduation Requirements

- Complete a minimum of 90 credits
- Completion of at least 24 credits at CCC
- Establish cumulative GPA of 2.0 or above

Requests for official evaluation of transcripts, course equivalencies and completion of degree requirements are to be submitted to the Registrar's Office.

Note: All courses must be 100 level or higher. Courses numbered 199, 280, and 299 can only be used in the electives areas. No course may be used to satisfy more than one requirement or distribution area.

** Courses used in these areas must be at least 3 credits.*

Student Guide 2005-2006
**Associate of Science Oregon Transfer Degree-Business
 (ASOT-Business)**

Requirements	Courses
<i>Writing (8 credits)</i>	WR-121, 122, 227 (Must have "C" grade or better)
<i>Oral Communication/Rhetoric (3 credits)</i>	SP-111 or SP-112 (Must have "C" grade or better)
<i>Mathematics (12 credits)</i>	MTH-111 or higher, 4 credits of statistics (MTH-243 or MTH-244) are required (Must have "C" grade or better)
<i>Computer Applications</i>	BA-131 or CS-121 and CS-125PS (Must have "C" grade or better)
Must equal a minimum of 12 credits from at least 2 disciplines	<p><i>Arts & Letters</i> (Courses used in this area must be at least 3 credits.)</p> <p>Select courses with a prefix of: ASL, FR, GER, JPN, RUS, SPN (languages must be 200 level) ART, ENG, HUM (except HUM 100), J, MUP, MUS, PHL, R, SP (courses numbered SP-126 and above), TA, WR (except WR-121, 122, 227)</p> <p style="text-align: center;">GENERAL EDUCATION DISTRIBUTION AREA</p>
Must equal a minimum of 12 credits from at least 2 disciplines	<p><i>Social Science</i> (Courses used in this area must be at least 3 credits.)</p> <p>EC-201 and 202 (Must have "C" grade or better) and courses with a prefix of: ANT, EC, GEO, HST, PS, PSY (except PSY-142), SOC, SSC, WS</p> <p style="text-align: center;">GENERAL EDUCATION DISTRIBUTION AREA</p>
Must equal a minimum of 12 credits	<p><i>Science</i> (Courses used in this area must be at least 3 credits.)</p> <p>Select courses with a prefix of: ASC, BI* (except BI-055, BI-163, BI-165D), BOT, CH (except CH-150), G (except G-119, G-124, G-134, G-145, G-148), GS (except GS135, GS-160), PH, Z</p> <p>*Concurrent enrollment required for BI-160/BI-160L or BI-165C/BI-165CL</p> <p style="text-align: center;">GENERAL EDUCATION DISTRIBUTION AREA</p>
<i>Business Specific</i>	BA-101, 226, 211, 212 and 213 (Must have "C" grade or better)
<i>Elective and/or University Specific Requirements</i> Other courses numbered 100 or above may be used in this area, which may include up to 12 credits of professional/technical courses. Please refer to the Professional/Technical pages 23-62 for a listing of courses that may be included in the 12 credits mentioned above.	Determined by choice of transfer institution. Please contact your transfer advisor for assistance.

Note: Placement in RD-115 and/or WR-121 is recommended for courses on this page and in some cases, placement in MTH-105 or MTH-111 may also be recommended. See course descriptions.

Note: All courses must be 100 level or higher. Courses numbered 199, 280, and 299 can only be used in the electives areas. No course may be used to satisfy more than one requirement or distribution area.

Student Planner Worksheet 2005-2006
**Associate of Science Oregon Transfer Degree-Business
 (ASOT-Business)**

This guide is to be used for educational planning/advising purposes only.

Requirements	Credits	CCC Courses	Transferred Courses	Credits Earned	Credits Needed
<i>Writing</i> WR-121, 122, 227 (Must complete with a "C" grade or better)	8				
<i>Oral Communications/Rhetoric</i> SP-111 or SP-112 (Must complete with a "C" grade or better)	3				
<i>Mathematics</i> MTH-111 or higher, 4 credits of statistics (MTH-243 or MTH-244) are required (Must complete with a "C" grade or better)	12				
<i>Computer Applications</i> BA-131 or CS-121 and CS-125PS (Must complete with a "C" grade or better)	<i>will vary</i>				
<i>Arts & Letters*</i> Select a minimum of 12 credits from at least two disciplines	12				
<i>Social Science*</i> Select a minimum of 12 credits from at least two disciplines, including EC-201 and EC-202	12				
<i>Science*</i> Select a minimum of 12 credits (lab science)	12				
<i>Business Specific</i> BA-101, 226, 211, 212 and 213 (Must complete with a "C" grade or better)	<i>will vary</i>				
<i>Elective Courses and/or University Specific Requirements</i> (Refer to your transfer school for specific university requirements. Up to 12 credits of professional/technical courses may be used.)	<i>will vary</i>				
TOTALS					

(Total minimum of 90 credits required.)

- Complete a minimum of 90 credits
- Completion of at least 24 credits at CCC
- Establish cumulative GPA of 2.0 or above

Requests for official evaluation of transcripts, course equivalencies and completion of degree requirements are to be submitted to the Registrar's Office.

Note: All courses must be 100 level or higher. Courses numbered 199, 280, and 299 can only be used in the electives areas. No course may be used to satisfy more than one requirement or distribution area.

** Courses used in these areas must be at least 3 credits.*

Student Planner Worksheet 2005-2006

Associate of General Studies Degree (AGS)

This guide is to be used for educational planning/advising purposes only.

	Requirements	CCC Courses Completed	Transferred Courses	Credits Earned	Courses Needed
Complete one course from each of the related instruction areas	<i>Communication</i>				
	<i>Computation</i>				
	<i>Human Relations</i>				
	<i>PE/Health</i>				
	<i>Total Related Instruction Credits</i>				
Complete additional college level coursework for a total minimum of 90 credits combined with the above	<i>Computer Literacy</i>				
	<i>Other College Level Courses</i>				
TOTALS					

- | | |
|--|--|
| <input type="checkbox"/> Complete a minimum of 90 credits
<input type="checkbox"/> Completion of at least 24 credits at CCC | <input type="checkbox"/> Establish cumulative GPA of 2.0 or above
<input type="checkbox"/> Meet Computer Literacy requirement |
|--|--|

Requests for official evaluation of transcripts, course equivalencies and completion of degree requirements are to be submitted to the Registrar's Office.

Approved Related Instruction Courses

ASSOCIATE OF GENERAL STUDIES • ASSOCIATE OF APPLIED SCIENCE • CERTIFICATES

Associate of Applied Science (AAS) Associate of General Studies (AGS)

For an *Associate of Applied Science or Associate of General Studies* degree complete one course from the following requirement areas:

- Communication
- Computation
- Human Relations
- Physical Education/Health

Certificate of Completion (CC)

For a *Certificate of Completion* that is at least one academic year in program length complete one course from the following requirement areas:

- Communication
- Computation
- Human Relations

List of Approved Courses:

The following represents approved courses for meeting related instruction requirement areas.

Communication

WR-101, 121, 122, 123, 227

Computation

Computer Science: CS-133VB, 161, 162, 260
Mathematics: MTH-050, 054, 065 or above (except 199 and 299)

Human Relations

Anthropology: ANT-102, 103
Business: BA-285
Education: ED-121, 122, 258
History: HST-101, 102, 103, 121, 122, 123, 201, 202, 203
Political Science: PS-203, 205
Psychology: PSY-101, 110, 200, 205, 214, 215, 219, 221, 231, 240
Sociology: SOC-204, 205, 206, 223, 225, 230
Speech: SP-100, 112, 126, 140, 218

Physical Education/Health

Health: Courses with an HE prefix
Physical Education: Courses with an HPE or PE prefix

Courses approved for AAS, AGS, or CC programs with additional or related instruction electives:

Courses approved for additional or related instruction electives include those listed in the Arts & Letter, Social Science and Science/Math/Computer Science general education areas as found on pages 15 and 18. Additional or related instruction electives may also be fulfilled by completing one of the approved courses listed on this page.

Students are encouraged to work closely with an academic advisor if they are planning to transfer to a four year institution upon completion of any of these programs.

Approved Courses for Computer Literacy

ASSOCIATE OF GENERAL STUDIES • ASSOCIATE OF APPLIED SCIENCE • CERTIFICATES

You must satisfy CCC's computer literacy requirement in order to receive an AGS or AAS degree or a one-year certificate of completion. The requirement may be satisfied by passing a computer literacy examination (check with Testing/Assessment, ext. 2269) or, satisfactorily completing one of the approved classes listed below.

List of Approved Courses:

ART-225	Computer Graphics I [C]	MFG-209	Programming & Automation for Manufacturing [C]
ART-226	Computer Graphics II [C]	MUS-101L	MIDI Lab [C]
ART-227	Computer Graphics III [C]	MUS-102L	MIDI Lab [C]
BA-131	Introduction to Business Computing [C]	MUS-103L	MIDI Lab [C]
BA-205	Solving Communication Problems with Technology [C]	MUS-105*	Music Appreciation [C]
BC-100	Construction Orientation: Overview of Construction Industry [C]	MUS-111L	MIDI Lab [C]
BC-107	Construction Career Portfolio [C]	MUS-112L	MIDI Lab [C]
BC-121	Professional Computing for Construction [C]	MUS-113L	MIDI Lab [C]
BC-201	Project Management I: Developing Project Expectations [C]	MUS-120	Finale I [C]
BC-202	Project Management II: Managing Project Expectations [C]	MUS-121	Finale II [C]
BC-203	Project Management III: Evaluating Project Expectations [C]	MUS-122	Finale III [C]
BT-120	Personal Keyboarding [C]	MUS-124	Jazz Arranging/Finale [C]
BT-160	MS Word for Windows [C]	MUS-141*	Intro to the Music Business [C] (online only)
BT-161	Intermediate Microsoft Word [C]	MUS-142	Intro to Electronic Music I: MIDI [C]
BT-170	Access [C]	MUS-143	Intro to Electronic Music II: Sequencing & Sampling [C]
BT-176	Excel for Windows [C]	MUS-144	Intro to Electronic Music IV: Digital Audio [C]
BT-262	Advanced Microsoft Word [C]	MUS-211L	MIDI Lab [C]
CDT-104	Professional computing Basics [C]	MUS-212L	MIDI Lab [C]
CS-090	Computers for New Users [C]	MUS-213L	MIDI Lab [C]
CS-091	Computers for New Users II [C]	SKH-030	Computer Access [C]
CS-120	Survey of Computing [C]	SKH-035	Computer Access [C]
CS-121	Computer Applications [C]	SP-111*	Public Speaking
CS-161	Computer Science [C]	SP-126*	Communication Between Sexes [C]
HOR-222	Horticulture Computer Applications [C]	SP-218*	Interpersonal Communication [C]
HUM-150	The Columbia Basin: Watershed of the Great NW [C]	SSC-150	The Columbia Basin [C]
HUM-151	The Columbia Basin: Watershed of the Great NW [C]	SSC-151	The Columbia Basin [C]
HUM-152	The Columbia Basin: Watershed of the Great NW [C]	SSC-152	The Columbia Basin [C]
HUM-160	Faith & Reason [C]	SSC-160	Faith & Reason [C]
HUM-161	Faith & Reason [C]	SSC-161	Faith & Reason [C]
HUM-162	Faith & Reason [C]	SSC-162	Faith & Reason [C]
HUM-170	Metamorphoses [C]	SSC-170	Metamorphoses [C]
HUM-171	Metamorphoses [C]	SSC-171	Metamorphoses [C]
HUM-172	Metamorphoses [C]	SSC-172	Metamorphoses [C]
HUM-233	Electronic Culture [C]	SSC-233	Electronic Culture [C]
HUM-234	Freedom, Privacy, and Technology [C]	SSC-234	Freedom, Privacy, and Technology [C]
J-215	Publications Lab [C]	WR-121*	English Composition
J-216	Reporting [C]	WR-122*	English Composition
J-218	Editing & Design [C]	WR-165	Writing on the Web [C]
J-226	Electronic Newspaper Production [C]	WR-227	Technical Report Writing [C]
MFG-109	Computer Literacy for Technicians [C]	WR-246	Editing & Publishing [C]

* Only certain sections meet the computer literacy requirements.

Associate of Applied Science (AAS) & Certificates of Completion (CC)

Acquire Practical Marketable Skills

PROFESSIONAL/TECHNICAL PROGRAMS (AAS) (CC)

Professional/Technical programs at Clackamas Community College provide the skills and work experience you'll need to qualify for a job upon graduation. Each program is planned with the help of local industry representatives to meet the needs of the current job market. Instruction is provided by trained, experienced professionals, and classes are conducted in an industry-like work setting with the latest equipment.

Cooperative Work Experience is an important feature of all CCC professional/technical programs. This special arrangement between CCC and local employers provides you with the opportunity to get on-the-job experience in the field of your choice while earning credit toward your degree or certificate.

CCC offers both one-year and two-year programs designed for employment in the field (many professional/technical programs offer both options). Specific degree and certificate requirements are listed on the following pages.

Associate of Applied Science (AAS) & Certificates of Completion (CC)

The Associate of Applied Science degrees and Certificates of Completion are professional technical in nature and are designed to prepare students for entry into the workforce. Occupational licensure, career advancement and further study at a four year college or university are additional possible opportunities for students earning an AAS degree or Certificate of Completion at CCC. Certificates of Completion are generally a one year program and are designed with occupational content. Please refer to the specific AAS or CC program for certificate/degree requirements. General requirements for obtaining an AAS or CC include:

- Establish a cumulative 2.0 GPA at CCC
- Establish residency by earning a minimum of 24 credits at CCC for an AAS degree; 12 credits for a certificate of completion
- Complete a minimum of 90 credits for an AAS degree

Students are encouraged to work closely with an academic advisor if they are planning to transfer to a four year institution upon completion of any of these programs.

Program Area	AAS	CC
Accounting	■	
Accounting Clerk		■
Automotive Service Technology	■	
Building Construction Technology	■	■
Business Management		■
Business Technology	■	
Clinical Laboratory Assistant		■
Collision Refinishing Technology	■	
Collision Repair/Refinishing		■
Collision Repair Technology	■	
Computer-Aided Drafting/ Computer-Aided Manufacturing	■	
Computer Application Specialist	■	■
Criminal Justice	■	■
Dental Assistant**		■
Drafting Technology	■	
Early Childhood Ed. & Family Studies		■
Electronic Publishing		■
Electronics Systems Technology	■	■
Emergency Management	■	
Emergency Medical Technology		■
Employment Skills Training		■
Energy & Resource Management	■	■
Fire Science (Wildland)	■	■
Geographic Information Systems (GIS)	■	■
Gerontology		■
Horticulture	■	■
Hospitality & Tourism Management		■
Human Services	■	
Human Resource Management		■
Industrial Technology	■	
Juvenile Corrections		■
Landscape	■	■
Manufacturing Technology	■	■
Marketing		■
Marketing & Management	■	
Medical Assistant		■
Medical Office Administrative Assistant		■
Microelectronics Systems Technology	■	■
Music Technology		■
Network & Microcomputer Specialist	■	■
Nursing	■	
Occupational Skills Training		■
Office Assistant		■
Paraeducator		■
Project Management	■	■
Retail Management*		■
Supervisory Training		■
Water & Environmental Technology	■	■
Water/High-Purity Production		■
Welding Technology	■	■

* Pending official approval.

** Pending national accreditation.

Smart.

Professional Technical

Professional/Technical Programs

Accounting	25	Horticulture	44
Accounting Clerk	25	Hospitality & Tourism Management	46
Automotive Service Technology	26	Human Resource Management	46
Building Construction Technology	27	Human Services	47
Business Management	28	Industrial Technology	48
Business Technology	28	Juvenile Corrections	48
Clinical Laboratory Assistant	29	Landscape	48
Collision Repair/Refinishing	29	Manufacturing Technology	50
Collision Refinishing Technology	30	Marketing	51
Collision Repair Technology	31	Marketing & Management	51
Computer-Aided Drafting/ Computer-Aided Manufacturing (CAD/CAM)	31	Medical Assistant	52
Computer Application Specialist	32	Medical Office Administrative Assistant	53
Criminal Justice	33	Microelectronics Systems Technology	53
Criminal Justice/Corrections Option	34	Music Technology	54
Dental Assistant**	35	Network & Microcomputer Specialist	55
Drafting Technology	36	Nursing	56
Drafting Technology/Architectural Option	37	Occupational Skills Training	57
Early Childhood Education & Family Studies	38	Office Assistant	58
Electronic Publishing	38	Paraeducator	58
Electronics Systems Technology	39	Project Management	59
Emergency Management	39	Project Management	59
Emergency Medical Technology	40	Retail Management*	60
Employment Skills Training	40	Supervisory Training	60
Energy & Resource Management	41	Water & Environmental Technology	60
Fire Science (Wildland)	42	Water/High-Purity Production	61
Geographic Information Systems (GIS)	43	Welding Technology	62
Gerontology	43		

* Pending official approval

** Pending National Accreditation

Accounting

ASSOCIATE OF APPLIED SCIENCE DEGREE

The Accounting program at Clackamas emphasizes developing an advanced understanding of accounting principles, the development of analytical skills and the capacity to solve problems. Students should have the ability to reason, read with comprehension and compute math problems.

The program is not designed to lead to a traditional four-year business administration degree, although it may articulate with accelerated and nontraditional programs such as those offered by private universities.

PROGRAM OUTCOMES

Students completing this program will be prepared for entry-level employment in accounting and office careers. They will analyze, summarize and record financial transactions and prepare summary statements for small and medium-sized businesses, both manually and using computerized systems.

CAREERS

Career opportunities may include bookkeeper, data-entry clerk, financial staff accountant, cost accountant, and general office clerk.

For information contact John Olds, ext. 2408 or johno@clackamas.edu

ACCOUNTING ASSOCIATE DEGREE: 1ST YEAR

FALL TERM	CREDITS
BA-101 Introduction to Business	4
BA-211 Financial Accounting I	4
BA-104* Business Math	3
BA-226 Business Law I	4
WR-121 English Composition	3

WINTER TERM	CREDITS
BA-131 Introduction to Business Computing [C]	4
BA-156 Business Forecasting	3
BA-177 Payroll Accounting	3
BA-212 Financial Accounting II	4
BA-251 Office Management	3

SPRING TERM	CREDITS
BA-205 Solving Communication Problems w/Tech. [C]	4
BA-213 Decision Making with Accounting Information	4
BA-218 Personal Finance	3
BA-285 Human Relations in Business	4

ACCOUNTING ASSOCIATE DEGREE: 2ND YEAR

FALL TERM	CREDITS
BA-223 Principles of Marketing	4
BA-240 Government Accounting	4
BA-256 Income Tax	3
PE/HE/HPE PE/Health elective	1

WINTER TERM

BA-216 Cost Accounting	3
BA-206 Management Fundamentals	4
BA-222 Financial Management	3
BA-227 Business Law II	4

SPRING TERM

BA-217 Budgeting for Managers	3
BA-225 Business Report Writing	3
BA-248 Auditing	3
BA-280 Business/CWE	3
BT-105 Computerized Accounting	3

Minimum credits required for degree 91

* For this degree, this course meets the Related Instruction Computation requirement.

Accounting Clerk

CERTIFICATE

Curriculum includes full-cycle bookkeeping and accounting, including manual and computerized data entry, transaction analysis, preparation of financial statements and other related tasks. Full-cycle proprietorship and partnership, service and merchandising are also covered, along with posting, preparation of period-end worksheets, entries, financial statements and payroll.

PROGRAM OUTCOMES

Students completing this certificate will be prepared for entry-level bookkeeping tasks, including manual and computerized data entry, transaction analysis, preparation of financial statements, and other related office tasks for an accounting firm or department. Students will be prepared to complete typical accounting clerk responsibilities such as journalizing, posting, assisting with tax, audit and other accounting procedures, preparing reports, communicating results and general office responsibilities.

CAREERS

Career opportunities may include accounts payable clerk, accounts receivable clerk, and data entry clerk for small and medium-sized service businesses.

For information contact John Olds, ext. 2408 or johno@clackamas.edu

ACCOUNTING CLERK CERTIFICATE

FALL TERM	CREDITS
BA-101 Introduction to Business	4
BA-211 Financial Accounting I	4
BA-104* Business Math	3
WR-121 English Composition	3

Continued

WINTER TERM

BA-131	Introduction to Business Computing [C]	4
BA-156	Business Forecasting	3
BA-177	Payroll Accounting	3
BA-212	Financial Accounting II	4
BA-251	Office Management	3

SPRING TERM

BA-205	Solving Communication Problems w/Tech. [C]	4
BA-213	Decision Making with Accounting Information	4
BA-226	Business Law I	4
BA-280	Business/CWE	3
BA-285	Human Relations in Business	4

Minimum credits required for certificate 50

* For this certificate, this course meets the Related Instruction Computation requirement.

Automotive Service Technology

ASSOCIATE OF APPLIED SCIENCE DEGREE INTERNSHIP PROGRAM

The program focuses on the repair and maintenance of passenger cars and light trucks. Coursework includes cooperative work experience working for a local employer, and those who wish to specialize may take advanced mechanic studies courses for more in-depth experience. Students may enter the program any term.

PREREQUISITES:

MTH-020 Fundamentals of Arithmetic or equivalent competency, and RD-090 Intermediate Reading Skills or equivalent competency.

AUTOMOTIVE TECHNICIAN'S INTERNSHIP PROGRAM

Clackamas Community College and the Northwest Automotive Trades Association co-sponsor the Automotive Technician's Internship Program (ATIP) training program. The program serves a limited number of CCC students each year.

TOYOTA "T-TEN" INTERNSHIP PROGRAM

Students sponsored by a dealer attend Clackamas the first year and transfer to Umpqua or Clark for the completion of the coursework. Clackamas Community College, in cooperation with Umpqua Community College and Clark College, provide a Toyota dealership internship program.

PROGRAM OUTCOMES

Program outcomes include the skills for entry-level employment in the industry as auto technicians maintaining and repairing passenger cars and light trucks, including repairing air conditioning systems, engine and transmission rebuilding, front-end repair and alignment, brake service, starting and charging system repair, and the diagnosis and repair of electronic engine controls and safety systems.

CAREERS

Career opportunities may include: automotive service mechanic/technician, recreational vehicle service technician, and truck service mechanic/technician.

For information contact the Automotive Department, 503-657-6958, ext. 2354.

AUTOMOTIVE SERVICE TECHNOLOGY ASSOCIATE DEGREE: 1ST YEAR

FALL TERM		CREDITS
AM-121	General Auto Repair I	3
AM-133	Engine Systems	7
MFG-109	Computer Literacy for Technicians [C]	3
PSY-101	Human Relations	3

WINTER TERM

AM-122	General Auto Repair II	3
AM-129	Electrical Systems	7
MTH-050	Technical Mathematics I	3
SP-100	Basic Speech Communication	3

SPRING TERM

AM-123	General Auto Repair III	3
AM-130	Brake Systems (corequisite: AM-131)	4
AM-131	Chassis Systems (corequisite: AM-130)	4
WR-101	Communication Skills: Occupational Writing	3

AUTOMOTIVE SERVICE TECHNOLOGY ASSOCIATE DEGREE: 2ND YEAR

FALL TERM		CREDITS
AM-235	Power Transmission Systems	7
AM-245	Automatic Transmission Systems	7
HE-252	First Aid/CPR	3

WINTER TERM

AB-112	Collision Repair Welding I	2
AM-228	Service Shop Management	4
AM-243	Fuel & Emission Control Systems (prerequisite or corequisite: AM-129)	7
—	Related Instruction elective	3

SPRING TERM

AM-224	Comfort Systems	4
AM-244	Advanced Electrical & Fuel Systems (prerequisites: AM-129 & AM-243)	7
AM-280	Auto Mechanics/CWE	6

Minimum credits required for degree (requirements + electives) 96

Note: An alternative course schedule is available. Contact the Advising & Counseling Center or the Automotive Department for information.

RECOMMENDED ELECTIVES

Any Automotive Service Technology (AM), Collision Repair (AB) or Collision Repair/Refinishing (ABR) course not included in the Automotive Service Technology Associate Degree Program.

Building Construction Technology

**CERTIFICATE
ASSOCIATE OF APPLIED SCIENCE DEGREE**

The Building Construction program utilizes research, documentation and hands-on applications to learn about the industry. Construction procedures, methods, standards and techniques are explored. The one-year certificate program is an exploration program designed to assist a student in pursuing a career option. Second-year students focus on basic construction management skills that can be directly applied in the field.

ARCHITECTURAL PROJECT MANAGEMENT

(PSU Articulation Agreement)

This program enables students who attend CCC to meet the requirements to articulate to Portland State University School of Architecture. To qualify for PSU's Architectural Project Management option, the student must meet PSU transfer requirements and complete CCC Project Management courses plus two additional 200-level elective courses from the PSU suggested offerings. For PSU requirements, see program advisor.

BUSINESS & LEADERSHIP

(Marylhurst Articulation Agreement)

This program has a core emphasis in construction project management and enables students who attend CCC to transfer to Marylhurst University for a business degree. Seek advising for most cost-effective means. Sue Metcalfe, ext. 2570.

PROGRAM OUTCOMES

The Building Construction certificate program outcomes include skills for entry-level construction positions such as general laborer, field trade assistant or various positions with construction suppliers. The two-year Building Construction associate degree includes the skills for construction positions as estimators, schedulers, project managers, professional assistants.

CAREERS

Careers Opportunities may include: construction estimator, project manager or construction laborer.

For information contact Ron Helbig, ext. 4635 or ronh@clackamas.edu

BUILDING CONSTRUCTION TECHNOLOGY CERTIFICATE

FALL TERM		CREDITS
BC-100	Construction Orientation [C]	6
BC-101	Building Trades Print Reading	4
— —	Building Construction electives	6

WINTER TERM

WR-101*	Communication Skills	3
or WR-121	English Composition	3-4
MTH-050*	Technical Mathematics 1	3-4
or MTH-065	Algebra II	
— —	Building Construction electives	8

SPRING TERM

BC-107	Construction Career Portfolio [C]	6
BC-180	Building Construction Technology/CWE	3
— —	Human Relations elective	3-4
— —	Related Instruction elective	3

Minimum credits required for certificate 45-47

*Substitute these courses if you plan to continue your education at a higher education institution. It is recommended that you consult with an advisor concerning the transfer requirements of the specific advanced program or school.

**BUILDING CONSTRUCTION TECHNOLOGY ASSOCIATE DEGREE:
1ST YEAR**

Complete certificate program.

**BUILDING CONSTRUCTION TECHNOLOGY ASSOCIATE DEGREE:
2ND YEAR**

FALL TERM		CREDITS
BC-201	Construction Management I [C] (or Building Construction/200-Level electives)	12
PE/HE/HPE	PE/Health elective	1-3
WINTER TERM		
BC-202	Construction Management II [C] (or Building Construction/200-Level electives)	12
— —	Related Instruction electives	4-5
SPRING TERM		
BC-203	Construction Management III [C] (or Building Construction/200-Level electives)	12
BC-280	Construction Projects/CWE	6
<i>Minimum credits required for degree</i>		92-97

BUILDING CONSTRUCTION ELECTIVES

100-LEVEL ELECTIVES:		CREDITS
BC-102	Introduction to Applied Building Construction	6
BC-104	Basic Carpentry	6
BC-121*	Professional Computing for Construction	4
BC-170	Industrial Performance, Health & Safety I	12

200-LEVEL ELECTIVES:		CREDITS
BC-204	Residential Construction Codes	12
BC-205	Commercial Construction Codes	12
BC-230	Home Inspection I	4
BC-231	Home Inspection II	4
BC-232	Home Inspection III	4
BC-233	Beyond ADA Standards	4
BC-270	Industry Performance, Health & Safety II	12
BC-286	Advanced Construction Applications	12

* Not offered every term.

Business Management

CERTIFICATE

Curriculum focuses on basic management and leadership skills, motivation, situational analysis, ethics, work flow analysis, ergonomics, personality and human relations, communications, technological innovations, and adapting to change.

PROGRAM OUTCOMES

Students will be prepared for a variety of entry-level supervisory or management-trainee positions. Students will be prepared to perform management responsibilities such as budgeting, scheduling, planning, organizing, critical thinking, decision-making and managing scarce and diminishing resources.

CAREERS

Career opportunities may include management trainee, first-line supervisory, management analyst, merchandiser, or marketing/sales representative in small and medium-sized retail and service companies.

For information call John Olds, ext. 2408 or johno@clackamas.edu; Joan Ryan, ext. 2363 or joanr@clackamas.edu

BUSINESS MANAGEMENT CERTIFICATE

FALL TERM		CREDITS
BA-101	Introduction to Business	4
BA-211	Financial Accounting I	4
BA-104*	Business Math	3
BA-223	Principles of Marketing	4
WR-121	English Composition	3
WINTER TERM		
BA-131	Introduction to Business Computing [C]	4
BA-156	Business Forecasting	3
BA-206	Management Fundamentals	4
BA-226	Business Law I	4
BA-285	Human Relations in Business	4
SPRING TERM		
BA-205	Solving Communication Problems w/Tech. [C]	4
BA-217	Budgeting for Managers	3
BA-218	Personal Finance	3
BA-224	Human Resource Management	4
BA-280	Business/CWE	3

Minimum credits required for certificate 54

* For this certificate, this course meets the Related Instruction Computation requirement.

Business Technology

ASSOCIATE OF APPLIED SCIENCE DEGREE

The Business Technology program provides students with a strong foundation of basic skills and courses in business administration, with an emphasis on critical thinking and human relations skills. The two-year program includes related instruction requirements, industry standard computer programs, and more advanced business administration courses.

PROGRAM OUTCOMES

Program outcomes include the skills necessary for entry-level positions in a variety of administrative or office support roles in business, industry, or the medical field or legal fields.

CAREERS

Career opportunities may include: administrative assistant, office manager, receptionist/office assistant, legal assistant, and medical secretary.

For information contact Tanya Patrick, ext. 2426 or tanyap@clackamas.edu

BUSINESS TECHNOLOGY ASSOCIATE DEGREE: 1ST YEAR

FALL TERM		CREDITS
BA-101	Introduction to Business	4
BA-104*	Business Math	3
BT-122	Keyboarding Skill Building	2
BT-124	Business Editing I	3
BT-160	Word I [C]	3
WINTER TERM		
BA-111	General Accounting I	
or BA-211	Financial Accounting I	4
BT-125	Business Editing II	3
BT-161	Word II [C]	3
BT-176	Excel	3
SPRING TERM		
BT-170	Access [C]	3
BT-216	Office Procedures	4
BT-262	Integrated Projects	3
WR-121	English Composition	3
— —	BA/BT electives	3

BUSINESS TECHNOLOGY ASSOCIATE DEGREE: 2ND YEAR

FALL TERM		CREDITS
BA-218	Personal Finance	3
BA-226	Business Law I	4
BA-285	Human Relations in Business	4
— —	BA/BT electives	4
WINTER TERM		
BA-156	Business Forecasting	3
BA-205	Solving Communication Problems w/Tech. [C]	4
BA-224	Human Resource Management	4
BT-220P	Desktop Publishing I: PageMaker	3
HE-249	Mental Health	
or HPE-295	Health & Fitness for Life	3

SPRING TERM

BA-225	Business Report Writing	3
BA-280	Business/CWE	6
BT-181	Front Page	3
— —	BA/BT elective	4

Minimum credits required for degree (requirements + electives) 92

* For this degree, this course meets the Related Instruction Computation requirement.

RECOMMENDED ELECTIVES

Any Business Administration (BA) or Business Technology (BT) course not included in the Business Technology program.

Clinical Laboratory Assistant

CERTIFICATE

Clinical laboratory assistants serve a diverse ancillary role assisting other laboratory personnel, physicians, and patients. Their duties may include data entry, laboratory billing practices, and the performance of ambulatory assistant level testing according to standard operating procedures. Students are trained in all aspects of the medical laboratory support personnel, including phlebotomy, specimen processing, quality control, laboratory orientation and regulation. Students will participate in unpaid, supervised externships in ambulatory or acute care laboratory settings.

Program is approved through the National Accrediting Agency for Clinical Laboratory Science (NAACLS).

Admission into the Clinical Laboratory Assistant program is during summer term by special application only. Specific skill levels are required in reading, writing, and math. Applicants are advised that a high level of dexterity, the ability to multi-task, and a high degree of attention to detail are required for the successful completion of this program. A physical examination by a licensed healthcare provider, immunizations and a criminal background check are required. Application packets with admission procedures and requirements are available from the Enrollment Services Center, the Advising & Counseling Center, or go to <http://depts.clackamas.edu/healthsciences>

PROGRAM OUTCOMES

Upon successful completion of the program, students will be eligible to sit for the National Certificate Association of Clinical Laboratory Science (NCA) Phlebotomy examination and/or the American Medical Technologist (AMT) Certified Office Laboratory Technician (COLT) examination. Students will be prepared for entry level employment as a clinical lab assistant.

CAREERS

Career opportunities may include but are not limited to: phlebotomist, laboratory specimen processor, waive testing analyzer, medical research assistant and physician office laboratory assistant.

For information contact Helen Wand, ext. 5055 or helenw@clackamas.edu

CLINICAL LABORATORY ASSISTANT CERTIFICATE

FALL TERM **CREDITS**

BI-055	Introduction to Human Biology	
or BI-102	General Biology (prerequisite BI-101)	3-4
CLA-100	Introduction to Healthcare	2
CLA-101	Clinical Laboratory Assistant Skills I	4
MA-110	Medical Terminology	3
MA-115	Phlebotomy	1
WR-101	Communication Skills: Occupational Writing	
or WR-121	English Composition	3

WINTER TERM

CLA-102	Clinical Laboratory Assistant Skills II	4
CLA-115	Laboratory Administrative Skills	2
CLA-119	Phlebotomy/Laboratory Practicum I	2
CS-120	Survey of Computing [C]	4
MTH-050	Technical Mathematics I	3

SPRING TERM

CLA-103	Clinical Laboratory Assistant Skills III	4
CLA-120	Phlebotomy/Laboratory Practicum II	4
PSY-101	Human Relations	3
SP-100	Basic Speech Communication	
or SP-218	Interpersonal Communication	3-4

Minimum credits required for certificate 45-47

Current First Aid and CPR for Healthcare Professionals (AHA or ASHI) certificates are required during practicums and must be taken prior to winter term practicum. A criminal background check is required.

Note: All clinical practicum courses are "Pass/No Pass". All other courses are letter grades and must be passed with a "C" grade or better in order to continue to the next quarter.

Collision Repair/Refinishing

CERTIFICATE

The refinishing program at Clackamas simulates real working conditions in a modern shop facility. Training combines intensive theory and practical lab experience tailored to specific needs. Coursework includes one term of cooperative work experience with a local employer. Program flexibility allows students to enter any term and proceed at their own pace. The certificate program is a four-term certificate program.

Refinishing technicians prepare vehicles for paint, mix and tint paint, do spot repairs and overall refinishing. Coursework covers the use of urethane systems including single, two stage, and tri-coat color applications. Skills needed by refinishing technicians include the ability to machine and hand-sand, work with hazardous materials, and use product application techniques.

Continued

PROGRAM OUTCOMES

Program outcomes include entry-level skills for employment in minor auto body repair in preparation for painting, automotive paint preparation and automotive painting and refinishing processes.

CAREERS

Career opportunities may include: paint prep technician, paint detail technician and auto body painter in independent repair shops, auto dealerships, paint suppliers, heavy equipment dealers or truck painting facilities.

For information contact David Bradley, ext. 2628 or bradleyd@clackamas.edu

COLLISION REPAIR REFINISHING CERTIFICATE

FALL TERM		CREDITS
AB-112	Collision Repair Welding I	2
ABR-125	Collision Repair/Refinishing I	12
MTH-050	Technical Mathematics I	3
WINTER TERM		
ABR-127	Collision Repair/Refinishing II (prerequisites: ABR-125 & AB-112)	12
AM-228	Service Shop Management	4
MFG-109	Computer Literacy for Technicians [C]	3
SPRING TERM		
ABR-129	Collision Repair/Refinishing III (prerequisite: ABR-127)	12
HE-252	First Aid/CPR	3
WR-101	Communication Skills: Occupational Writing	3
SUMMER TERM		
ABR-180	Auto Body Refinishing/CWE	6
PSY-101	Human Relations	3
<i>Minimum credits required for certificate</i>		63

Collision Refinishing Technology

ASSOCIATE OF APPLIED SCIENCE DEGREE

The refinishing program at Clackamas simulates real working conditions in a modern shop facility. Training combines intensive theory and practical lab experience tailored to specific needs. Coursework includes one term of cooperative work experience with a local employer. Program flexibility allows students to enter any term and proceed at their own pace.

Refinishing technicians prepare vehicles for paint, mix and tint paint, do spot repairs and overall refinishing. Coursework covers the use of urethane systems including single, two stage, and tri-coat color applications. Skills needed by refinishing technicians include the ability to machine and hand-sand, work with hazardous materials, and use product application techniques.

PROGRAM OUTCOMES

Program outcomes include entry-level skills for employment in collision refinishing technology, including body preparation and painting and refinishing techniques.

CAREERS

Career opportunities may include collision repair, painter, restoration painter, estimator or manager in independent repair shops, auto dealerships, paint suppliers, heavy equipment dealers or truck painting facilities.

For information contact David Bradley, ext. 2628 or bradleyd@clackamas.edu

**COLLISION REFINISHING TECHNOLOGY ASSOCIATE DEGREE:
1ST YEAR**

FIRST TERM		CREDITS
AB-112	Collision Repair Welding I	2
ABR-125	Collision Repair/Refinishing I	12
MTH-050	Technical Mathematics I	3
SECOND TERM		
ABR-127	Collision Repair/Refinishing II	12
AM-228	Service Shop Management	4
MFG-109	Computer Literacy for Technicians [C]	3
THIRD TERM		
ABR-129	Collision Repair/Refinishing III	12
HE-252	First Aid/CPR	3
WR-101	Communication Skills: Occupational Writing	3

**COLLISION REFINISHING TECHNOLOGY ASSOCIATE DEGREE:
2ND YEAR**

FOURTH TERM		CREDITS
ABR-225	Production Shop Techniques	10
— —	Related Instruction elective	3
FIFTH TERM		
ABR-227	Restoration Practices	10
AB-149	Collision Repair Estimating I	2
ABR-142	Airbrush Art	2
SIXTH TERM		
AB-150	Collision Estimating II	2
— —	Related Instruction elective	3
ABR-180	Auto Body Refinishing/CWE	6
PSY-101	Human Relations	3

Minimum credits required for degree (requirements + electives): 95

Recommended electives: ABR-152 Custom Painting Fundamentals, ABR-162 Basic Automotive Pinstriping.

Collision Repair Technology

ASSOCIATE OF APPLIED SCIENCE DEGREE

Coursework covers advanced techniques for welding automotive metals, installing fixed and adjustable glass and repairing dents, fiberglass and rubber parts. Repair of electrical, safety, steering and suspension, and air conditioning systems is also covered.

PROGRAM OUTCOMES

Program outcome include entry-level skills for employment to repair or replace damaged panels, parts and frames on both unibody and conventional frame vehicles.

CAREERS

Career opportunities are similar to those for collision repair/refinishing, and may also include auto body repairer, auto body frame technician, and auto body prep person.

For information contact Wayne Austen, ext. 2249 or waynea@clackamas.edu

COLLISION REPAIR TECHNOLOGY ASSOCIATE DEGREE: 1ST YEAR

FALL TERM		CREDITS
AB-112	Collision Repair Welding I	2
AB-113	Collision Repair I/Nonstructural	12
HE-252	First Aid/CPR	3
WINTER TERM		
AB-111	Collision Repair/Chassis & Brakes	5
AB-123	Collision Repair Welding II	2
AM-228	Service Shop Management	4
MTH-050	Technical Mathematics I	3
WR-101	Communication Skills: Occupational Writing	3
SPRING TERM		
AB-133	Collision Repair II/Structural	12
AB-211	Collision Repair/Electrical I	4
— —	Related Instruction elective	3

COLLISION REPAIR TECHNOLOGY ASSOCIATE DEGREE: 2ND YEAR

FALL TERM		CREDITS
AB-222	Collision Repair III/Advanced Structural	12
SP-100	Basic Speech Communication	3
WINTER TERM		
AB-280	Collision Repair/CWE	6
AM-224	Comfort Systems	4
MFG-109	Computer Literacy for Technicians [C]	3
SPRING TERM		
AB-224	Advanced Collision Repair IV	10
AB-231	Collision Repair/Electrical II	3
— —	Related Instruction elective	3
<i>Minimum credits required for degree (requirements + electives)</i>		97

RECOMMENDED ELECTIVES

Any Automotive Service Technology (AM), Collision Repair (AB) or Collision Repair/Refinishing (ABR) course not included in the Collision Repair Technology Associate Degree program.

Computer-Aided Drafting/ Computer-Aided Manufacturing (CAD/CAM)

ASSOCIATE OF APPLIED SCIENCE DEGREE

This program combines training in computer-aided drafting (CAD) and computer-aided manufacturing (CAM). Coursework emphasizes computer-aided mechanical drafting, machine tool fundamentals, computer numerical control (CNC), and computer-aided manufacturing.

PROGRAM OUTCOMES

Program outcomes include entry-level skills for employment as a CNC/CAD/CAM technician and draftsman to provide a company with the needed computerized drafting or computer aided manufacturing support from initial product design through manufacturing, including design and print-reading, CAD and kinematics drafting, machine tool operations and requisite mathematical and geometric functions.

CAREERS

Career opportunities may include: CNC programmers and operators, CAD technician, manufacturing engineering technician and CAD/CAM technician.

For information contact Mike Mattson (Manufacturing), ext. 2483 or mattsonm@clackamas.edu; Michael Jones (Drafting), ext. 2443 or mikej@clackamas.edu

MANUFACTURING ENGINEERING TECHNOLOGY (OIT Transfer courses)

The CCC Manufacturing Technology Department, in partnership with Oregon Institute of Technology (OIT), offers a significant number of transferable classes into OIT's Manufacturing Engineering Technology degree program. Contact the Manufacturing department for more information, ext. 2483.

COMPUTER-AIDED DRAFTING/COMPUTER-AIDED MANUFACTURING (CAD/CAM) ASSOCIATE DEGREE

FIRST TERM		CREDITS
CDT-102	Sketching & Problem Solving	2
CDT-103	Computer-Aided Drafting I	4
MFG-104	Print Reading	2
MTH-050**	Technical Mathematics I	3
WR-101**	Communication Skills: Occupational Writing	3
SECOND TERM		
CDT-104*	Professional Computing Basics [C]	3
CDT-105	Computer-Aided Drafting II	4
MFG-105	Dimensional Inspection	2
MFG-111	Machine Tool Fundamentals I	6
MTH-080**	Technical Mathematics II	3

Continued

THIRD TERM

CDT-107	Computer-Aided Drafting III	4
CDT-108A	Introduction to Solid Modeling	3
MFG-112	Machine Tool Fundamentals II	6
MTH-085**	Technical Mathematics III	3

FOURTH TERM

CDT-109A	Project Drafting I-CAD/CAM	2
CDT-110	Kinematics Drafting	3
MFG-106	Applied Geometric Dimensioning & Tolerancing for Manufacturing	3
MFG-201	CNC I: Set-up & Operation	4
MFG-204	Computer-Aided Manufacturing I	4
— —	Human Relations elective	3

FIFTH TERM

MFG-113	Machine Tool Fundamentals III	6
MFG-202	CNC II: Programming & Operation	4
MFG-205	Computer-Aided Manufacturing II	4
PE/HE/HPE	PE/Health elective	3

SIXTH TERM

MFG-206	Computer-Aided Manufacturing III	2
MFG-211	Machine Tool Fundamentals IV	6
MFG-221	Materials Science	3
MFG-280	Manufacturing Technology/CWE	4

Minimum credits required for degree: 99

* MFG-209 Programming and Automation for Manufacturing [C], can be substituted for CDT-104.

**Substitute college transfer courses for these courses if you plan to continue your education at a higher education institution. It is recommended that you consult with a faculty advisor or a staff member in the Advising & Counseling Center for the transfer requirements of the specific advanced program or school.

Students with specialized job training needs may be eligible to substitute some classes. Consult your instructor or the Department Chair for more information.

Computer Application Specialist

CERTIFICATE ASSOCIATE OF APPLIED SCIENCE DEGREE

Students may earn either a one-year certificate or a two-year Associate of Applied Science degree. The coursework emphasizes development of analytical and problem-solving skills. Cooperative Work Experience (CWE) is supervised on-the-job employment that supplements the academic classroom environment.

Prerequisites for first term classes include completed coursework or placement out of CS-120 Survey of Computing, WR-095 Paragraph to Essay, and MTH-065 Algebra II. This program is an open program, meaning that students may take any class in the program for which they have completed the prerequisite.

PROGRAM OUTCOMES

Program outcomes include entry-level skills for employment in technical positions using and supporting computer software, including operating systems, web development, spreadsheets, databases, and programming software.

CAREERS

Career opportunities may include computer support specialist, database specialist, and network system administrator, software installation and maintenance, user support and training, or web development.

For information contact Linda Anderson, ext. 2539 or lindaa@clackamas.edu

COMPUTER APPLICATION SPECIALIST CERTIFICATE

FALL TERM		CREDITS
CS-121	Computer Applications [C]	3
CS-140	Operating Systems I	4
CS-160	Computer Tech Orientation	2
CS-225	Computer End-User Support	3
MTH-092	Math for Computer Technicians	4
WINTER TERM		
CS-125H	Web Site Design and HTML	3
CS-125P	Computer Publishing	3
CS-135W	Advanced Word Processing	3
CS-179	Data Communications Concepts	3
WR-101	Communications Skills: Occupational Writing	
or WR-121	English Composition	3
SPRING TERM		
BA-101	Introduction to Business	4
CS-135I	Advanced Internet Applications	3
CS-135S	Advanced Spreadsheet	3
CS-280	Computer Science/CWE	3
— —	Human Relations elective (recommended: BA-285 or PSY-101)	3-4

Minimum credits required for certificate: 47-48

**COMPUTER APPLICATIONS SPECIALIST ASSOCIATE DEGREE:
1ST YEAR**

FALL TERM		CREDITS
CS-121	Computer Applications [C]	3
CS-140	Operating Systems I	4
CS-160	Computer Tech Orientation	2
CS-225	Computer End-User Support	3
MTH-092	Math for Computer Technicians	4
WINTER TERM		
CS-125H	Web Site Design and HTML	3
CS-135W	Advanced Word Processing	3
CS-179	Data Communications	3
CS-240W	Operating Systems II: Windows	3
WR-101	Communications Skills: Occupational Writing	
or WR-121	English Composition	3
SPRING TERM		
ART-225	Computer Graphics I	3
BA-101	Introduction to Business	4
CS-135I	Advanced Internet Applications	3
CS-133VB	Visual Basic.net I	3
CS-280	Computer Science/CWE	3

**COMPUTER APPLICATIONS SPECIALIST ASSOCIATE DEGREE:
2ND YEAR**

FALL TERM		CREDITS
CS-133S	Web Application Development I	3
CS-135DB	Advanced Database	3
CS-140U	Operating Systems I: Linux/UNIX	3
— —	Human Relations elective (recommended: BA-285 or PSY-101)	2-4
— —	Focus area	3
WINTER TERM		
CS-125P	Computer Publishing	3
CS-195	Website Technologies I	3
CS-275	Database Design	3
HE-252 or HPE-295	First Aid/CPR Health & Fitness for Life	3
— —	Focus area	4-5
SPRING TERM		
CS-135S	Advanced Spreadsheet	3
CS-133VA	Visual Basic for Applications	3
CS-280	Computer Science/CWE	6
— —	Focus area	3-6

Minimum credits required for degree (requirements & electives) 93-96

ADDITIONAL COURSES FROM FOCUS AREA

Complete all courses from one of the following Focus Areas (11-12 credits)

APPLICATION SUPPORT

ART-226	Computer Graphics II	3
BT-220P	Desktop Publishing I: PageMaker	3
CS-226	Applications Support	3
CS-289I	Web Server Administration	2

WEB/DATABASE PROGRAMMING

CS-233S	Web Application Development II	3
CS-234S	Web Application Development III	3
CS-289I	Web Server Administration	2
CS-295	Website Technologies II	3

ACCOUNTING

BA-211	Financial Accounting I	4
BA-212	Financial Accounting II	4
BA-213	Decision Making with Accounting Information	4

PROGRAMMING

CS-161	Computer Science I	4
CS-162	Computer Science II	4
CS-260	Data Structures	4

Criminal Justice

ASSOCIATE OF APPLIED SCIENCE DEGREE

The coursework for this two-year program is designed to develop students' knowledge and skills in the areas of law enforcement, courts, and corrections. Areas emphasized include community policing, criminal investigation, routine patrol, and criminological theory. Students gain an appreciation of the various parts of the criminal justice system and how they function as a whole. Students may enter this program during any term.

The coursework for this program includes cooperative work experience which affords the student opportunity for hand-on-experience with many local, federal & state law enforcement agencies.

PROGRAM OUTCOMES

Program outcomes include the skills necessary for entry-level employment with a local law enforcement agency, as well as other opportunities with federal and state agencies.

CAREERS

Career opportunities may include law enforcement officer at the local, state, or national level, loss prevention officers, and Homeland Security officers. Many departments require college coursework or degrees in addition to civil service requirements.

For general information or information about transferring to a four-year institution contact Dick Ashbaugh, ext. 2237 or dicka@clackamas.edu

CRIMINAL JUSTICE ASSOCIATE DEGREE: 1ST YEAR

FALL TERM		CREDITS
CJA-110	Introduction to Law Enforcement	3
CJA-112	Patrol Procedures	3
CJA-200	Community Relations/Policing	3
HE-204	Nutrition & Weight Control	3
WR-121	English Composition	3
WINTER TERM		
CJA-120	Judicial Process	3
CJA-130	Introduction to Corrections	3
CJA-213	Interview & Interrogation	3
SP-111	Public Speaking	4
WR-122	English Composition	3
SPRING TERM		
CJA-101	Criminology	3
CJA-201	Juvenile Delinquency	3
CJA-240	Cultural Diversity/Law Enforcement	3
HE-205	Youth Addiction	3
MTH-050 or MTH-065	Technical Mathematics I Algebra II	3-4

Continued

CRIMINAL JUSTICE ASSOCIATE DEGREE: 2ND YEAR

FALL TERM		CREDITS
CJA-122	Criminal Law	3
CJA-210	Criminal Investigation I	3
CS-120	Survey of Computing [C]	4
CJA-223	Criminal Justice Ethics	3
PSY-101	Human Relations	3
WINTER TERM		
CJA-211	Criminal Investigation II	3
CJA-220	Substantive Law	3
CJA-243	Narcotics & Dangerous Drugs	3
SOC-206	Institutions & Social Change	4
— —	Related Instruction elective	3
SPRING TERM		
CJA-203	Crisis Intervention	3
CJA-212	Criminal Investigation III	3
CJA-222	Procedural Law	3
CJA-280	Criminal Justice/Corrections/CWE	6
— —	Related Instruction elective	3

Minimum credits required for degree (requirements + electives) 96-97

RECOMMENDED ELECTIVES

CJA-134	Correctional Institutions
CJA-137	Mass Murder/Serial Killers
CJA-138	Terrorism/Impact/Strategies
CJA-140	Introduction to Crime Analysis
CJA-141	Introduction to Crime Mapping
CJA-230	Substantive Law
CJA-232	Corrections Casework

Criminal Justice/Corrections Option

CERTIFICATE

The corrections certificate program utilizes an inter-disciplinary approach, including sociological, psychological and biological behavioral perspectives to provide students a well-rounded basis for interacting with corrections clients in a variety of correctional settings.

Coursework includes cooperative work experience, hands-on experience in a correctional agency, to supplement and apply knowledge acquired in academic courses.

PROGRAM OUTCOMES

Program outcomes include the skills and knowledge needed to qualify for an entry-level position in a state or local corrections system. Corrections professionals may also be qualified to move into other areas of law enforcement or social service.

CAREERS

Career opportunities may include correctional officer, work release counselor, and corrections technician.

For information contact Dick Ashbaugh, ext. 2237 or dicka@clackamas.edu

CRIMINAL JUSTICE/CORRECTIONS OPTION CERTIFICATE

FALL TERM		CREDITS
CJA-110	Intro to Law Enforcement	3
CJA-130	Intro to Corrections	3
CS -120	Survey of Computing [C]	4
SP-111	Public Speaking	4
WINTER TERM		
CJA-120	Judicial Process	3
CJA-134	Correctional Institutions	3
HE-204	Nutrition & Weight Control	3
PSY-221	Introduction to Counseling	4
WR-121	English Composition	3
SPRING TERM		
CJA-101	Criminology	3
CJA-203	Crisis Intervention	3
CJA-280	Corrections/CWE	3
MTH-050	Technical Mathematics I	
	or MTH-065 Algebra I	3-4
WR-122	English Composition	3

Minimum credits required for certificate 45-46

Criminal Justice/Corrections Option

ASSOCIATE OF APPLIED SCIENCE DEGREE

The corrections program utilizes an inter-disciplinary approach, including sociological, psychological, and biological behavioral perspectives to provide students with a well-rounded basis for interacting with corrections clients in a variety of correctional settings.

Coursework includes cooperative work experience, hand-on experience in a correctional agency to supplement and apply knowledge gained in academic courses.

PROGRAM OUTCOMES

Program outcomes of the two-year option include the skills and knowledge needed to qualify for a job in a federal, state or local corrections system. Corrections professionals may also be qualified to move into other areas of law enforcement or social service.

CAREERS

Career opportunities are generally in jail and prison facilities as well as community corrections agencies, and may include correctional officer, correctional counselor, and probation and parole officer.

For information contact Dick Ashbaugh, ext. 2237 or dicka@clackamas.edu

CRIMINAL JUSTICE/CORRECTIONS OPTION ASSOCIATE DEGREE: 1ST YEAR

FALL TERM		CREDITS
CJA-110	Introduction to Law Enforcement	3
CJA-130	Introduction to Corrections	3
CS-120	Survey of Computing [C]	4
SP-111	Public Speaking	4
WR-121	English Composition	3

WINTER TERM

CJA-120	Judicial Process	3
CJA-134	Correctional Institutions	3
HE-204	Nutrition & Weight Control	3
PSY-221	Introduction to Counseling	4
WR-122	English Composition	3

SPRING TERM

CJA-101	Introduction to Criminology	3
CJA-203	Crisis Intervention	3
HE-205	Youth Addiction	3
MTH-050	Technical Mathematics I	3-4
— —	or MTH-065 Algebra II	3-4
— —	Related Instruction elective	3

**CRIMINAL JUSTICE/CORRECTIONS OPTION ASSOCIATE DEGREE:
2ND YEAR**

FALL TERM		CREDITS
CJA-122	Criminal Law	3
CJA-232	Corrections Casework	3
CJA-223	Criminal Justice Ethics	3
PSY-101	Human Relations	3
— —	Related Instruction elective	3

WINTER TERM

CJA-201	Juvenile Delinquency	3
CJA-213	Interview & Interrogation	3
CJA-243	Narcotics & Dangerous Drugs	3
SOC-206	Institutions & Social Change	4
— —	Related Instruction elective	3

SPRING TERM

CJA-230	Juvenile Corrections	3
CJA-240	Cultural Diversity/Law Enforcement	3
CJA-280	Criminal Justice/Corrections/CWE	6
— —	Related Instruction elective	3

Minimum credits required for degree 94-95

RECOMMENDED ELECTIVES

CJA-112	Patrol Procedures
CJA-137	Mass Murder/Serial Killers
CJA-138	Terrorism Impact/Strategies
CJA-140	Introduction to Crime Analysis
CJA-141	Introduction to Crime Mapping
CJA-200	Community Relations/Policing
CJA-210	Criminal Investigation I
CJA-211	Criminal Investigation II
CJA-212	Criminal Investigation III
CJA-220	Substantive Law
CJA-222	Procedural Law

Dental Assistant

CERTIFICATE

This program is designed to prepare students for entry level into practice in the dental care setting. The goal of the program is to graduate students that have demonstrated competencies in clinical and administrative practices as well as demonstrated work ethics and professional values consistent with that of the American Dental Association (ADA). Program approval by the ADA is pending.

Admission to the Dental Assistant program is during summer term to enroll for fall classes. Admission is by special application process only. Specific skills are required in reading, writing and math. Applicants are advised that a high level of dexterity, the ability to multi-task, and a high degree of attention to detail are required for the successful completion of this program. A physical examination by a licensed healthcare provider, immunizations and a criminal background check are required. Students will participate in unpaid, supervised externships in the dental care setting.

PROGRAM OUTCOMES

Upon successful completion of the program, students will be eligible to take the necessary exams offered through the Dental Assistant National Board and the Oregon Board of Dentistry. Students will be prepared for entry level employment as a Dental Assistant.

CAREERS

Career opportunities may include but are not limited to: managed care facilities, private dental practices, state and county clinics, dental schools and the insurance industry.

Application packets with admission procedures and requirements are available from the Enrollment Services Center, the Advising & Counseling Center, or at <http://depts.clackamas.edu/healthsciences>

DENTAL ASSISTANT PROGRAM CERTIFICATE

FIRST TERM		CREDITS
DA-101	Dental Radiology I/Lab	3
DA-104	Clinical Procedures I/Lab	3
DA-107	Dental Materials I/Lab	3
DA-110	Clinical Practicum I	1
DA-115	Dental Science	1
DA-125	Dental Infection Control	1
MTH-050	Technical Mathematics I	3

SECOND TERM

DA-102	Dental Radiology II/Lab	1
DA-105	Clinical Procedures II/Lab	3
DA-108	Dental Materials II/Lab	2
DA-120	Clinical Practicum II	5
DA-135	Pharmacology/Med. Emergencies	1
CS-120	Survey of Computing [C]	4

Continued

THIRD TERM

DA-106	Clinical Procedures III/Lab	2
DA-130	Clinical Practicum III	8
DA-145	Dental Office Procedures	2
PSY-101	Human Relations	3
WR-101	Communication Skills: Occupational Writing	3

Minimum credits required for certificate 49

Note: The ADA requires all courses receive a letter grade. Students must achieve a "C" or higher grade in all required courses prior to advancing to the next term.

Drafting Technology

ASSOCIATE OF APPLIED SCIENCE DEGREE PROFESSIONAL UPGRADE

Professional drafters convert engineering sketches and designs into formal drawings for product manufacturing, building construction or facilities layout. The foundation of the Drafting Technology program is mechanical (manufacturing) drafting with exposure to each of the drafting fields, including architectural, structural, civil, industrial piping and sheet metal drafting. Students may enter the program any term. Coursework covers the basics of 2D, 3D, modeling, animation, customization and programming. Individual instruction stresses industrial standards and techniques; and building applicable skills, work habits and logic.

Some courses are offered in a distance learning format and require that you have your own computer and a current version of AutoCAD.

DRAFTING FOR THE DISABLED

The program works with students with disabilities. The department can assist in customizing a workstation with adaptive equipment. Students pace themselves, allowing additional time for training to learn commands and procedures. Specific needs for adaptive equipment are dealt with on an individual basis.

PROGRAM OUTCOMES

Program outcomes include the skills necessary for entry-level work as a drafter in engineering, manufacturing, construction, government, utilities, design, management, estimating, computer programming and related occupations.

CAREERS

Career opportunities may include: architectural and civil drafters, mechanical drafters, and electrical drafters.

For information contact Michael Jones, ext. 2443 or mikej@clackamas.edu

COMPUTER-AIDED DRAFTING/COMPUTER-AIDED MANUFACTURING (CAD/CAM)

See degree program on pages 31-32.

GEOGRAPHIC INFORMATION SYSTEMS (GIS)

See certificate and degree programs on page 43.

DRAFTING TECHNOLOGY ASSOCIATE DEGREE**FIRST TERM**

		CREDITS
CDT-101	Drafting Technology Survey	3
CDT-102	Sketching and Problem Solving	3
CDT-103	Computer-Aided Drafting I	4
CDT-104	Professional Computing Basics [C]	3
MTH-050	Technical Mathematics I (higher levels of math may be substituted)	3

SECOND TERM

CDT-105	Computer-Aided Drafting II	4
CDT-106	Applied Descriptive Geometry	3
MTH-080	Technical Mathematics II	3
WR-101	Communication Skills: Occupational Writing	3
— —*	Human Relations elective (recommended: SP-100)	3

THIRD TERM

CDT-107	Computer-Aided Drafting III	4
CDT-108	CAD 3D	3
CDT-202	Architectural Drafting I	4
CDT-204	Civil Drafting	3
MTH-085	Technical Mathematics III	3

FOURTH TERM

CDT-108A	Introduction to Solid Modeling	3
CDT-109	Project Drafting I	5
CDT-110	Kinematics Drafting	3
CDT-111	Geometric Dimensioning & Tolerancing	3
CDT-201	AutoCAD Customization	3

FIFTH TERM

CDT-203	Sheet Metal Drafting	3
CDT-206	CAD/CAM Integration	2
CDT-208	Schematic Drafting	3
CDT-209	Structural Drafting I	3
TPH-100	Technical Physics (Winter term only)	3
PE/HE/HPE*	PE/Health elective	1

SIXTH TERM

CDT-207	Introduction to AutoLISP	3
CDT-210	Industrial Pipe Drafting	3
CDT-211	CAD Technical Communication	3
CDT-280	Drafting Technology/CWE	6

Minimum credits required for degree 96

* Substitute college transfer courses for these courses if you plan to continue your education at a higher education institution. It is recommended that you consult with a faculty advisor or a staff member in the Advising & Counseling Center for the transfer requirements of the specific advanced program or school.

Drafting Technology/ Architectural Option

ASSOCIATE OF APPLIED SCIENCE DEGREE

Professional drafters convert engineering sketches and designs into formal drawings for building construction or facilities layout. Exposure to each of the drafting fields, including architectural, structural, civil, industrial piping and sheet metal drafting will be given. Students may enter the program any term. Individual instruction stresses industrial standards and techniques; and building applicable skills, work habits and logic.

Some courses are offered in a distance learning format and require that you have your own computer and a current version of AutoCAD.

DRAFTING FOR THE DISABLED

The program works with students with disabilities. The department can assist in customizing a workstation with adaptive equipment. Students pace themselves, allowing additional time for training to learn commands and procedures. Specific needs for adaptive equipment are dealt with on an individual basis.

PROGRAM OUTCOMES

Program outcomes include the skills necessary for entry-level work as a drafter in engineering, manufacturing, construction, government, utilities, design, management, estimating, computer programming and related occupations.

CAREERS

Career opportunities may include: architectural and civil drafters.

For information contact Michael Jones, ext. 2443 or mikej@clackamas.edu

ARCHITECTURAL OPTION

This degree option allows students to receive an Associate of Applied Science degree in Drafting Technology with 27 credits completed in residential and structural drafting in place of advanced mechanical drafting classes.

DRAFTING TECHNOLOGY/ARCHITECTURAL OPTION ASSOCIATE DEGREE

FIRST TERM		CREDITS
CDT-101	Drafting Technology Survey	3
CDT-102	Sketching and Problem Solving	3
CDT-103	Computer-Aided Drafting I	4
CDT-104	Professional Computing Basics [C]	3
MTH-050*	Technical Mathematics I (higher levels of math may be substituted)	3

SECOND TERM

CDT-105	Computer-Aided Drafting II	4
CDT-106	Applied Descriptive Geometry	3
MTH-080*	Technical Mathematics II	3
WR-101	Communication Skills: Occupational Writing	3
— —*	Human Relations elective (recommended: SP-100)	3

THIRD TERM

CDT-107	Computer-Aided Drafting III	4
CDT-108	CAD 3D	3
CDT-202	Architectural Drafting I	4
CDT-204	Civil Drafting	3
MTH-085*	Technical Mathematics III	3

FOURTH TERM

CDT-201	CAD Menu Design	3
CDT-212A	Architectural Drafting II	3
CDT-212B	Architectural Materials	2
CDT-214	Building Codes	2
CDT-219	Architectural Detailing	3
CDT-209	Structural Drafting I	3

FIFTH TERM

CDT-203	Sheet Metal	3
CDT-211	CAD Technical Communication	3
CDT-213	Architectural Drafting III	4
CDT-215	Structural Drafting II	4
TPH-100	Technical Physics (Winter term only)	3

SIXTH TERM

CDT-216	Structural Drafting III	4
CDT-217	Introduction to Remodeling	4
CDT-280	Drafting Technology/CWE	6
PE/HE/HPE	PE/Health electives	1-3

Minimum credits required for degree 97-99

RECOMMENDED

CDT-207	Introduction to AutoLISP	3
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* Substitute college transfer courses for these courses if you plan to continue your education at a higher education institution. It is recommended that you consult with a faculty advisor or a staff member in the Advising & Counseling Center for the transfer requirements of the specific advanced program or school.

Early Childhood Education & Family Studies

CERTIFICATE

This program provides a foundation in early childhood care and education core knowledge areas. Coursework will be taught following Developmentally Appropriate Practice (DAP) principles, outlined by the National Associate for the Education of Young Children (NAEYC).

PROGRAM OUTCOMES

Upon completion of this certificate program, participants will have completed the education/training required for application to either the CDA (Child Development Associate) national credential and/or to Oregon's Early Childhood Care and Education Professional Development Registry (PDR) at Step 8. Program outcomes include the skills necessary for entry-level work in childhood care and education, or as paraprofessionals in child and family support systems.

CAREERS

Career opportunities may include: pre-school teachers, daycare teachers/workers, and infant toddler teachers.

For information contact Patricia McIlveen, ext. 2240 or patriciam@clackamas.edu; Lynne Maloney, ext. 2527 or lynnem@clackamas.edu

EARLY CHILDHOOD ED. & FAMILY STUDIES CERTIFICATE

SUMMER	CREDITS
MTH-050 Technical Mathematics I	3
WR-121 English Composition	3
or WR-101 Communication Skills: Occupational Writing	
FALL	
CS-120 Survey of Computing [C]	4
ECE-150* Intro. & Observation in Early Childhood Ed.	3
HDF-260 Child Abuse & Neglect	3
HDF-225** Prenatal, Infant & Toddler Development	3
FN-225 Nutrition	4
WINTER	
ECE-209 Theory & Practicum (on campus)	3
ECE-240*** Lesson & Curriculum Planning	3
HDF-247 Preschool Development	3
HS-154 Community Resources	3
ECE-154 Language & Literacy	3
SPRING	
ECE-280 Early Childhood Education/CWE	3
HDF-140 Contemporary American Families	3
ECE-239 Helping Children & Families Cope w/Stress	3
SP-140 Introduction to Intercultural Communication	
or ED-258 Multicultural Education	3-4
HE-261 Community/CPR (Includes Infant CPR)	1
<i>Minimum credits required for certificate</i>	51-52

* Non-childhood care & education students can substitute HDF-141 Effective Parenting I for ECE-150.

** ECE-175 Infant/Toddler Caregiving (3 credits) can be substituted for HDF-225.

*** Non-childhood care & education students can substitute HDF-142 Effective Parenting II for ECE-240.

An Associate of Applied Science Degree in Human Services is available for Early Childhood Education & Family Studies. This certificate program meets first year requirements.

Electronic Publishing

CERTIFICATE

Curriculum focuses on the preparation of professional-looking reports, forms, newsletters, technical and academic papers, display advertising, brochures and business presentations. Coursework emphasizes the key skill areas needed for success, including communications, design, computer applications and production. The program focuses on the high-tech administrative assistant skills needed for a high-end administrative support position.

PROGRAM OUTCOMES

Students completing this certificate will demonstrate entry-level skills to qualify for jobs in electronic publishing, both printed and on-line.

CAREERS

Career opportunities may include: graphic designer, desktop publisher, and production artist.

For information contact Bill Symes, ext. 2440 or bills@clackamas.edu; Joan Ryan, ext. 2363 or joanr@clackamas.edu

ELECTRONIC PUBLISHING CERTIFICATE

FALL TERM	CREDITS
BA-101 Introduction to Business	4
BA-131 Introduction to Business Computing [C]	4
ART-115 Basic Design: Two Dimensional Design	4
MTH-050 Technical Mathematics I	3
WR-121 English Composition	3
WINTER TERM	
ART-116 Basic Design: Color Theory & Composition	4
BA-104 Business Math	3
BT-124 Business Editing I	3
BT-181 FrontPage	3
BT-220P Desktop Publishing I: PageMaker	3
SPRING TERM	
ART-225 Introduction to Computer Graphics	4
BA-205 Solving Communication Problems w/Tech. [C]	4
BA-280 Business/CWE	3
BA-285 Human Relations in Business	4
BT-125 Business Editing II	3
<i>Minimum credits required for certificate</i>	52

Electronics Systems Technology

**CERTIFICATE
ASSOCIATE OF APPLIED SCIENCE DEGREE
PROFESSIONAL UPGRADE**

Program coursework focuses on a traditional electronics foundation, including a basic electronics series, digital logic series, a troubleshooting series, a physics series, and a semiconductor linear circuit series. The degree focuses on electronics, engineering design principles and electronics systems and is taught in a team environment whenever possible.

Specific skill areas for the Electric Systems Technology degree include test equipment use, computer use, problem-solving, teamwork, understanding math and electronics fundamentals and writing and oral communications.

PROGRAM OUTCOMES

Program outcomes include the knowledge and skills for entry-level employment as a technician in a wide variety of industries, such as circuit board manufacturing, medical electronics manufacturing, and electronic equipment manufacturing and service

CAREERS

Career opportunities may include: engineering technician, manufacturing equipment technician, and field services technician, and operators and processors with large and small employers in high-tech industries.

For information contact Mike Mattson, ext. 2483 or mattsonm@clackamas.edu

ELECTRONICS SYSTEMS TECHNOLOGY CERTIFICATE: 1ST YEAR

FIRST TERM		CREDITS
EET-112	Electronic Test Equipment & Soldering	1
EET-137	DC Circuits	4
EET-139	Principles of Troubleshooting I	2
MTH-065	Algebra II	4
SM-150	Semiconductor Processing I	2
WR-101*	Communication Skills: Occupational Writing	3

SECOND TERM

EET-141	Transient Analysis & Network Theorems	4
EET-157	Digital Logic I	3
MFG-109	Computer Literacy for Technicians [C]	3
MTH-095	Algebra III	4
SP-100*	Basic Speech Communication	3

THIRD TERM

EET-127	Semiconductor Circuits I	4
EET-142	AC Circuits	4
EET-257	Digital Logic II	4
MTH-111	College Algebra	5
SM-280	Electronics & Microelectronics/CWE	2

Minimum credits required for certificate 52

**ELECTRONICS SYSTEMS TECHNOLOGY ASSOCIATE DEGREE:
1ST YEAR**

Complete certificate program.

**ELECTRONICS SYSTEMS TECHNOLOGY ASSOCIATE DEGREE:
2ND YEAR**

FOURTH TERM		CREDITS
EET-215	Principles & Applications of MFG Equip Tech I	2
EET-227	Semiconductor Circuits II	3
EET-239	Principles of Troubleshooting II	2
MFG-107	Industrial Safety & OSHA	3
PH-201**	General Physics	5

FIFTH TERM

EET-250	Linear Circuits	3
EET-252	Control Systems	3
EET-254	Introduction to Microcontrollers	4
MFG-209	Programming & Automation for Mfg. [C]	3
PH-202**	General Physics	5

SIXTH TERM

EET-230	Laser and Fiber Optics	3
MFG-133	Programmable Logic Controllers	3
PE/HE/HPE	PE/Health electives	3
PH-203**	General Physics	5
SM-280	Electronics & Microelectronics/CWE	2

Minimum credits required for degree (requirements & electives) 101

*Substitute college transfer courses for these courses if you plan to continue your education at a higher education institution. It is recommended that you consult with a faculty advisor or a staff member in the Advising & Counseling Center for the transfer requirements of the specific advanced program or school.

**The Physics with Calculus series PH-211/212/213 may be substituted.

**ELECTRONICS ENGINEERING TECHNOLOGY
(OIT Transfer Courses)**

The CCC Manufacturing Technology Department, in partnership with Oregon Institute of Technology (OIT), offers a number of transferable classes into OIT's Electronics Engineering Technology degree program. Contact Contact Mike Mattson at 503-657-6958, ext. 2483 or mattsonm@clackamas.edu for more information.

Emergency Management

ASSOCIATE OF APPLIED SCIENCE DEGREE

Emergency Management coursework prepares a student to make decisions, problem solve, communicate effectively, and coordinate all sources necessary for preparedness, mitigation, response and recovery for any possible emergency or disaster. A program overview and other documentation can be found on the Criminal Justice/Emergency Management website: <http://depts.clackamas.edu/crimjust/intro.htm>

PROGRAM OUTCOMES

Program outcomes will include the skills necessary for entry-level positions with public or private sector agencies responsible for preparedness planning and managing of any type of life-threatening disaster.

Continued

CAREERS

Career opportunities may include: local emergency manager, FEMA worker, public safety manager, Homeland Defense Agency worker, and risk assessment manager.

For information contact Dick Ashbaugh, ext. 2237 or dicka@clackamas.edu

Emergency Medical Technology

CERTIFICATE

EMTs (Emergency Medical Technicians) give immediate care to critically ill or injured people in the prehospital setting and provide transport to hospitals, care facilities, and private residences. The ability to work under pressure in challenging environments, think critically to make difficult decisions independently and perform life-saving skills precisely are essential to success in this career. A criminal history background check and immunizations are required.

EMTs in Oregon must be certified by the state through the Department of Health and Human Services, EMS & Trauma Systems Section (DHS EMS). National certification is available through the National Registry of EMTs (NREMT). Each certification requires approved continuing education classes in emergency care for certification renewal. The Clackamas Community College Emergency Medical Technology certificate program includes the required Oregon and national EMT-Basic certification and satisfies the first year of the AAS-EMT (Associate of Applied Science, Emergency Medical Technology) degree required for certification as an Oregon EMT-Paramedic. Technicians can pursue advanced training for the AAS-EMT and bachelor degree level upon transfer to an accredited degree-granting institution.

PROGRAM OUTCOMES

The EMT program at Clackamas Community College prepares students to begin their careers in EMS and continue their education to the paramedic level. EMT-Basic course prepares students to test for both national and state certification. The EMT-Intermediate course prepares candidates to test for Oregon certification.

CAREERS

Career opportunities that may require EMT training include but are not limited to: Firefighter (career or volunteer), Paramedic, Search & Rescue, Critical Care Transport or Basic Life Support transport provider. The college CC-EMT (Certificate of Completion - EMT) leads to a career as a paramedic after completion of the AAS-EMT (Associate of Applied Science - EMT) degree at an accredited institution.

For more information contact Merlin Curry, ext. 2274 or merlinc@clackamas.edu

<http://depts.clackamas.cc.or.us/EMT>

EMERGENCY MEDICAL TECHNOLOGY CERTIFICATE

FALL TERM		CREDITS
BI-231	Human Anatomy & Physiology I	4
EMT-101	EMT Basic-Part I	5
EMT-105	Introduction to Emergency Medical Service	3
MTH-065	Algebra II	4
SP-111	Public Speaking	4
WINTER TERM		
BI-232	Human Anatomy & Physiology II	4
CS-120	Survey of Computing [C]	4
EMT-102	EMT Basic-Part II	5
MA-110	Medical Terminology	3
WR-121	English Composition	3
SPRING TERM		
BI-233	Human Anatomy & Physiology III	4
CJA-203	Crisis Intervention	3
EMT-106	Emergency Communications & Patient Transport	3
EMT-107	EMT Rescue	3
SOC-205	Sociology	4
<i>Minimum credits required for certificate</i>		56

Employment Skills Training

CERTIFICATE

The EST certificate provides a quick entry strategy for learning the knowledge and skills necessary to start or change a career path.

Combine college courses with specified hands-on instruction at a local employer to improve a career path. The student's goals and needs are combined with information from employers, the labor market, and the college to determine the knowledge and skills needed to obtain employment in a specific occupation. The student receives an individualized EST plan.

In addition to preparing a person for employment the individualized EST plan guides the student in gaining more education and training which develops the student's career path. The program is open entry/open exit, allowing students to begin any term.

PROGRAM OUTCOMES

Program outcomes are specific to the student's goals and may include:

Individualized career plan detailing the college courses to be completed and the knowledge and skills to be learned to support a career path

Occupation specific knowledge and skills developed on the job and in the classroom

Basic employment skills, job search skills, career management skills, and/or an introductory contact with an employer(s) and/or hiring manager(s)

CAREERS

Completion of an EST certificate can impact any career.

For more information please contact the Career and Employer Resource Center at ext. 2232 or career@clackamas.edu.

PROGRAM REQUIREMENTS

A Certificate of Completion is earned by completing at least 12 credits of occupationally related college level classes. For every 3 occupationally related credits, one cooperative work experience credit may be included in the plan.

An EST plan must be developed with, and approved by, a department's faculty advisor prior to pursuing a certificate.

All of the college's collegiate level credit courses are eligible to be included in the certificate. Developmental courses may be included as pre-requisites in a plan but can not be part of the EST certificate.

For information contact the Career & Employer Resource Center, ext. 2232 or career@clackamas.edu

Energy & Resource Management

**CERTIFICATE
ASSOCIATE OF APPLIED SCIENCE DEGREE**

This program provides for instruction in traditional and alternative energy generation, distribution, operation, management and leadership.

PROGRAM OUTCOMES

The program outcomes include skills for entry-level employment in the energy/utility workforce, application to a related apprenticeship, or articulation to a university with an energy focus.

This program is endorsed by the Utility Training Alliance and the Utility Education Training Alliance (UETA) to generate succession training and workforce development.

CAREERS

Career options could include: entry-level applied technical trades and engineering consulting, maintenance and warehouse operations, resource specialists in environmental protection, support personnel, service and equipment providers and installers, entry to professional training and scientific positions.

For information contact Bob Topping, ext. 4636 or bobt@clackamas.edu

**ENERGY & RESOURCE MANAGEMENT CERTIFICATE:
1ST YEAR**

FALL TERM		CREDITS
ERM-100	Orientation to Energy & Resource Management [C]	3
ERM-101	Energy and Resource Technology I [C]	3
ERM-107	Career Portfolio (or related elective) [C]	3
ERM-170	Energy Industry Performance (or related elective)	2
HPE-296	Health & Fitness for Industry I	2
WR-121	English Composition	3

WINTER TERM

ERM-102	Energy & Resource Technology II: Electricity [C]	3
ERM-170	Energy Industry Performance, Health & Safety I (or related elective)	4
MTH-065	Algebra II	4
— —	Related Instruction elective	3

SPRING TERM

ERM-103	Energy & Resource Technology III: Natural Gas [C]	3
ERM-170	Energy Industry Performance, Health & Safety I (or related elective)	6
ERM-180	Energy & Resource Management CWE (or related elective)	3
PSY-101	Human Relations or Human Relations elective	3
HPE-297	Health & Fitness for Industry II	2
<i>Minimum credits required for certificate</i>		47

**ENERGY & RESOURCE MANAGEMENT ASSOCIATE DEGREE:
2ND YEAR**

FALL TERM		CREDITS
CS-120	Survey of Computing [C] (or Related Instruction elective)	3-4
ERM-201	Energy Applications I: Renew. Energy Resources [C]	6
ERM-270	Energy Industry Performance, Health & Safety II (or related elective)	3
SSC-150	The Columbia Basin	5

WINTER TERM

ERM-202	Energy Applications II [C]	6
ERM-108	Career Marketing Strategies [C]	3
ERM-270	Energy Industry Performance, Health & Safety II	3
SSC-151	The Columbia Basin	5

SPRING TERM

ERM-203	Energy Applications III [C]	6
ERM-280	Energy Resource Projects/CWE	3
— —	Related Instruction elective	3
<i>Minimum credits required for degree</i>		93-94

RELATED ELECTIVES

Up to 12 credits from the courses below:

ERM-270	Energy Industry Performance, Health & Safety II
ERM-286	Adv. Energy & Resource Management Applications

Fire Science (Wildland)

CERTIFICATE ASSOCIATE OF APPLIED SCIENCE DEGREE

The Wildland Fire Science program provides training that can lead to seasonal employment in wildland firefighting or to the first step to a career in the forest industry or park service. There are many career tracks in the field of wildland firefighting and forestry. It's exciting work that requires fundamental survival, safety and firefighting training and skills. It is also important to be physically fit, work well in a team environment and respond quickly and efficiently to instruction/commands.

Clackamas Community College is a certified training site recognized by the Pacific Northwest Wildfire Coordinating Group (PNWCG) and the Oregon Department of Forestry. Program instructors are NWCG certified and offer 15-30 years of wildland firefighting experience. Many of the courses carry NWCG certification as well as college credit.

PROGRAM OUTCOMES

The Wildland Firefighting certificate program outcomes are: a basic knowledge of fire behavior, survival and wildland firefighting skills for entry-level wildland firefighting positions, such as Firefighter 1. The two-year Fire Science (Wildland) associate degree expands on the first year knowledge and experience to provide advanced training and awareness including environmental regulations, physical and mental preparedness, and supervisory and leadership training.

CAREERS

The certificate or degree can lead to careers as a wildland firefighter, forest & conservation technician, forest fire inspector or investigator, forest fire prevention specialist, an independent firefighting contractor, or employment in the timber industry.

For information contact Tom Laugle, ext. 2319 or toml@clackamas.edu or Sue Metcalfe, ext. 2570 or suemet@clackamas.edu

FIRE SCIENCE-WILDLAND CERTIFICATE

FIRST TERM	CREDITS
FRP-130 Intro to Wildland Firefighting	3
FRP-243 Survivor I: Map, Compass, GPS	2
HD-120 New Student College Success	1
MTH-050 Technical Math I	3-4
or MTH-065 Algebra III	
PE-185 Physical Education	1
(recommended: Weight Training Beg.)	
WR-121 English Composition	3
or WR-101 Communication Skills: Occupational Writing	

SECOND TERM

ESH-103 Hazardous Waste Operations & Emerg. Response	2
FRP-211 Portable Pumps & Water Use	1
FRP-244 Survivor II: Wilderness	1
HE-252 First Aid/CPR	3
PE-185 Physical Education	1
(recommended: Weight Training Int.)	
— — Related Instruction elective	3-4
— — Human Relations elective	3
(recommended: PSY-101)	

THIRD TERM

FRP-180 Wildland Firefighting/CWE	6
FRP-212 Wildfire Power Saws	2
FRP-216 Driving for the Fire Service	2
PE-185 Physical Education	1
(recommended: Weight Training Adv.)	
— — Computer Literacy elective	3
— — Related Instruction electives	6

Minimum credits required for certificate 47-49

FIRE SCIENCE-WILDLAND ASSOCIATE DEGREE: 1ST YEAR

Complete certificate program.

FIRE SCIENCE-WILDLAND ASSOCIATE DEGREE: 2ND YEAR

FIRST TERM

ESH-100 Environmental Regulations	3
FRP-131 Advanced Firefighter Training	1
GIS-201 Intro to Geographic Information Systems (GIS)	4
HE-255 Body & Alcohol	3
PE-185 Physical Education	1
— — Science, social science or related elective	4-5
(recommended: EMT Basic Part I)	

SECOND TERM

FRP-249 Leadership for Firefighters	2
FRP-290 Intermediate Wildland Fire Behavior Fire	3
FRP-215 Fire Operation in the Urban Interface	3
PE-185 Physical Education	1
— — Science, social science or related elective	4-5
(recommended: EMT Basic Part I)	

THIRD TERM

FRP-200 Basic Incident Command System (ICS)	1
FRP-230 Crew Boss (Single Resource)	2
FRP-231 Engine Boss (Single Resource)	1
FRP-270 Basic Air Operations	1
PE-185 Physical Education	1
FRP-280 Advanced Wildland Firefighting/CWE	6
— — Science, social science or related elective	3

Minimum credits required for degree 91-95

* Meets certificate and A.A.S. general ed requirements

**Seek advising before registering for "Science, social science or related electives".

RELATED ELECTIVES:

EMT-101 EMT Basic Part I
EMT-102 EMT Basic Part II
EMT-107 EMT Rescue
ESR-171 Environmental Science
ESR-172 Environmental Science
ESR-173 Environmental Science
FRP-217 Interagency Helicopter Training
FRP-232 Dozer Boss (Single Resource)

FRP-234	Ignition Operations
FRP-259	Task Force/Strike Team Leader
FRP-260	Interagency Incident Management
GEO-100	Introduction to Physical Geography
GS-109	Meteorology
HE-151	Body & Drugs
HOR-226	Plant Identification/Fall
HOR-228	Plant Identification/Spring

Geographic Information Systems (GIS)

CERTIFICATE ASSOCIATE OF APPLIED SCIENCE DEGREE

The Associate of Applied Science (AAS) and Certificate of Completion in GIS program offer instruction in the fields of geography, cartography, computer-aided drafting (CAD), global positioning systems (GPS), database theory, and mathematics, in order to create, manipulate, and query a GIS. The programs also include instruction in research skills, technical mathematics, computer programming, human relations skills, and other field competencies

PROGRAM OUTCOMES

Program outcomes include technician skills necessary for entry into a broad range of positions with city, county, and state agencies, and engineering firms and utilities that utilize GIS.

CAREERS

Career opportunities may include: survey technician, mapping technician, and cartography technician

For information contact Michael Jones, 503-657-6958, ext. 2443 or mikej@clackamas.edu

GEOGRAPHIC INFORMATION SYSTEMS CERTIFICATE

FALL TERM		CREDITS
WR-101	Communication Skills: Occup. Writing	3
CDT-104	Professional Computing Basics [C]	3
GEO-100	Introduction to Physical Geography	
or GEO-110	Cultural & Human Geography	4
GIS-201	Intro to Geographic Info Systems	4
GIS-210	Research Techniques	2
WINTER TERM		
MTH-085	Technical Math III	3
CS-121	Computer Applications [C]	3
GIS-220	CAD Skills for GIS	4
GIS-230	Computer Cartography	3
— —	Human Relations elective	3
SPRING TERM		
GIS-232	Data Collection & Application	3
CDT-204	Civil Drafting Technology	3
GIS-234	Aerial Photo Interpretation	3
GIS-236	Visual Basic Programming for GIS	3
GIS-281	ArcGIS I (degree only)	
or GIS-280	GIS/CWE (certificate only)	4-5
<i>Minimum credits required for certificate</i>		48-49

GEOGRAPHIC INFORMATION SYSTEMS ASSOCIATE DEGREE: 1ST YEAR

Complete certificate program.

GEOGRAPHIC INFORMATION SYSTEMS ASSOCIATE DEGREE: 2ND YEAR

SUMMER TERM		CREDITS
GIS-250	GIS Field Work	4
FALL TERM		
GIS-284	GIS Software Applications	5
GIS-282	ArcGIS II	5
— —	Related Instruction elective	6
WINTER TERM		
CDT-224	Professional Web Design	3
GIS-286	Remote Sensing	4
GIS-287	Spatial Modeling and Analysis	5
GIS-288	Advanced Databases for GIS	3
SPRING TERM		
GIS-289	Special Project	3
GIS-280	GIS/CWE	6
PE/HE/HPE	PE/Health elective	3
<i>Minimum credits required for degree</i>		95-96

Note: Terms must be taken in consecutive order.

Gerontology

CERTIFICATE

The Gerontology program offers coursework in the scientific study of aging for anyone interested in working with older people.

Clackamas offers a one-year certificate in gerontology. Students may select electives to support two possible areas of interest: housing management or human services.

This one-year certificate in Gerontology can serve as the first year of a two-year associate of applied science degree in Human Services

PROGRAM OUTCOMES

This program can provide the skills necessary for entry-level work directly with older people in private and governmental social and health service agencies, senior centers, or for administrative positions in residential facilities for the elderly.

CAREERS

Career opportunities may include activity director, senior services case worker, housing and senior advocates and senior housing administrative positions.

For information contact Lynne Maloney, ext. 2527, or lynnem@clackamas.edu

Continued

GERONTOLOGY CERTIFICATE

FALL TERM		CREDITS
EC-115	Introduction to Basic Economics	
or EC-201	Principles of Economics: Microeconomics	
or BA-156	Business Forecasting	3-4
PSY-101	Human Relations	
or BA-285	Human Relations in Business	3-4
SOC-230	Perspectives on Aging	4
WR-121	English Composition	
or WR-101*	Communication Skills: Occupational Writing [C]	3
— —	Gerontology electives	3

*See current *Schedule of Classes* for sections to satisfy computer literacy requirement.

WINTER TERM

MTH-065	Algebra II	4
SOC-223	Psycho-Social Aspects of Aging	4
SOC-231	Health & Biological Aspects of Aging	4
— —	Gerontology electives	6

SPRING TERM

HS-280	Gerontology/CWE	6
SOC-232	Encounters with Death	4
— —	Gerontology electives	2

Minimum credits required (requirements + electives) 46-48

Current First Aid and CPR certificates are also required for a certificate in Gerontology.

**GERONTOLOGY RECOMMENDED ELECTIVES:
HUMAN SERVICES INTEREST**

BI-101-103	General Biology
CS-120	Survey of Computing [C]
ED-258	Multicultural Education
FN-110	Personal Nutrition
FN-225	Nutrition
HE-249	Mental Health
HPE-295	Health & Fitness for Life
HS-120	Basic Caregiver Training
HS-165	Activity Director in Long Term Care
HS-170	Introduction to Hospice Care
MA-110	Medical Terminology
PSY-200	Psychology as a Natural Science
PSY-205	Psychology as a Social Science
PSY-219	Introduction to Abnormal Psychology
PSY-215	Introduction to Developmental Psychology
PSY-221	Introduction to Counseling
PSY-231	Introduction to Human Sexuality
PSY-240	Interpersonal Awareness & Growth Techniques
SOC-204-206	Sociology
SP-100	Basic Speech Communication
SP-111	Public Speaking
SP-112	Persuasive Speaking
SP-218	Interpersonal Communications
SP-219	Small Group Communications

**GERONTOLOGY RECOMMENDED ELECTIVES:
HOUSING MANAGEMENT INTEREST**

BA-101	Introduction to Business
BA-131	Introduction to Business Computing [C]
BA-206	Management Fundamentals
BA-211	Financial Accounting I
BA-212	Financial Accounting II
BA-213	Decision Making with Accounting Information
BA-217	Budgeting for Managers
BA-223	Principles of Marketing
BA-224	Human Resource Management
BA-225	Business Report Writing
BA-226-227	Introduction

Horticulture

**CERTIFICATE
ASSOCIATE OF APPLIED SCIENCE DEGREE**

Horticulture is a hands-on broad based curriculum where students participate in a laboratory-style practicum class which develops a full season's experience in growing and caring for plants. Students are involved in the day-to-day operation and maintenance of CCC's extensive greenhouse and landscape facilities, while training with tools of the trade: mowers, rototillers, tractors, pesticide applicators, greenhouse equipment and pruning tools. Students cultivate CCC's award-winning, All-American Selections Garden and landscape areas on the CCC campus.

CCC's Horticulture and Landscape programs are the only programs accredited in Oregon by the Associated Landscape Contractors of America (ALCA). This accreditation provides students with enhanced opportunities to follow national ALCA landscaping standards.

Students may begin this program any term. Degree options include a one-year certificate program or a two-year associate degree program. Following the course of offerings in the order listed is encouraged unless otherwise advised by the Horticulture Advisor. The certificate and associate degree programs include a cooperative work experience class which requires working with a horticultural employer.

PROGRAM OUTCOMES

Program outcomes include the skills necessary for entry-level employment into tree and shrub and perennial plant nurseries, greenhouse work, plant propagation, landscape design, landscape installation and maintenance, maintenance of interior plants, landscape supply, and equipment sales.

Students are eligible to sit for the Oregon Certified Nursery Professional Exam. Students completing the Horticulture AAS with a 2.5 GPA or higher, are eligible to take the Oregon Landscape Contractors License Exam.

CAREERS

Career opportunities include nursery and garden center manager and associate, nursery production, greenhouse grower, organic food production, supply and equipment sales, landscape design, installation and maintenance worker, parks department personnel, and groundskeeper.

For information contact Elizabeth Howley, Horticulture Advisor, ext. 2389 or ehowley@clackamas.edu

OSU TRANSFER AGREEMENT

Some Horticulture classes transfer to Oregon State University as part of a bachelor's degree. Horticulture students planning to continue their studies at a four-year college should consult the advisor (up to 45 credits of Horticulture classes transfer as part of a bachelor's degree). The Horticulture advisor will work with individual students in order to obtain the most recent transfer information.

TRANSFER ELECTIVES

HOR-111	Horticulture Practicum	6
HOR-226	Plant Identification/Fall	3
HOR-227	Plant Identification/Winter	3
HOR-228	Plant Identification/Spring	3

HORTICULTURE CERTIFICATE

FALL TERM		CREDITS
CS-090	Computers for New Users [C]	2
HOR-111	Horticulture Practicum (Fall)	6
HOR-122	Greenhouse Crops-Potted Plants or HOR-123 Landscape Maintenance	3
HOR-222	Horticultural Computer Applications [C]	2
HOR-226	Plant Identification (Fall)	3
WINTER TERM		
HOR-130	Plant Propagation Theory or HOR-131 Tree & Shrub Pruning (Winter)	3
HOR-132	Pesticide Selection & Use	3
HOR-133	Horticulture Practicum (Winter)	6
HOR-227	Plant Identification (Winter)	3
MTH-050	Technical Mathematics I or MTH-065 Algebra II (or above)	3-5
SPRING TERM		
HOR-140	Soils & Fertilizers	3
HOR-142	Greenhouse Crops-Bedding Plants or HOR-145 Turf Installation & Maintenance	3
HOR-143	Horticulture Practicum (Spring)	6
HOR-228	Plant Identification (Spring)	3
SP-100	Basic Speech Communication	3
SUMMER TERM		
HOR-280	Horticulture/CWE	3
WR-101	Communication Skills: Occupational Writing	3
<i>Minimum credits required for certificate</i>		58-60

HORTICULTURE ASSOCIATE DEGREE: 1ST YEAR

FALL TERM		CREDITS
CS-090	Computers for New Users [C]	2
HOR-111	Horticulture Practicum (Fall)	6
HOR-122	Greenhouse Crops-Potted Plants or HOR-123 Landscape Maintenance	3
HOR-222	Horticultural Computer Applications [C]	2
HOR-226	Plant Identification (Fall)	3
WINTER TERM		
HOR-130	Plant Propagation Theory or HOR-131 Tree & Shrub Pruning (Winter)	3
HOR-132	Pesticide Selection & Use	3
HOR-133	Horticulture Practicum (Winter)	6
HOR-227	Plant Identification (Winter)	3
MTH-050	Technical Mathematics I or MTH-065 Algebra II (or above)	3-5
SPRING TERM		
HOR-140	Soils & Fertilizers	3
HOR-142	Greenhouse Crops-Bedding Plants or HOR-145 Turf Installation & Maintenance	3
HOR-143	Horticulture Practicum (Spring)	6
HOR-228	Plant Identification (Spring)	3
SP-100	Basic Speech Communication	3
SUMMER TERM		
HOR-281	Horticulture/CWE	6

HORTICULTURE ASSOCIATE DEGREE: 2ND YEAR

FALL TERM		CREDITS
WR-101	Communication Skills: Occupational Writing	3
— —	Related Instruction elective	3
— —	Horticulture electives	6
WINTER TERM		
HOR-230	Equipment Operation & Maintenance	3
— —	Select one: BA-101, BA-211, BA-223, HOR-238	3-4
— —	Horticulture electives	6
SPRING TERM		
HE-252	First Aid/CPR	3
PSY-101	Human Relations	3-4
— —	or BA-285 Human Relations in Business	
— —	Horticulture electives	6
<i>Minimum credits required for degree (requirements + electives)</i>		94-98

HORTICULTURE ELECTIVES

HOR-114	Garden Design	1
HOR-134	Herb Growing & Gardening	1
HOR-144	Basic Pruning	1
HOR-146	Fruit Tree Short Course	1
HOR-211	Native Plant Identification	1
HOR-212	Flower Arranger's Garden (Fall)	3
HOR-213	Computer-Aided Landscape Design	3
HOR-215	Herbaceous Perennial Plants	3
HOR-220	Plant Propagation (Fall)	3
HOR-223	Flower Arranging	3
HOR-224	Landscape Installation	3
HOR-225	Principles of Arboriculture	3
HOR-229	Basic Landscape Design	3
HOR-231	Irrigation & Drainage Design	3
HOR-232	Commercial Floral Design	3
HOR-233	Plant Propagation (Winter)	3
HOR-234	Intermediate Landscape Design	3

Continued

HOR-235	Weed Identification	2
HOR-236	Insect Identification	2
HOR-237	Disease Identification	2
HOR-238	Landscape Business Operations	3
HOR-239	Tree Climber Training	2
HOR-240	Irrigation & Drainage Practices	3
HOR-241	Nursery Management	3
HOR-242	Plant Propagation (Spring)	3
HOR-243	Tree & Shrub Pruning (Spring)	3
HOR-244	Environmental Landscape Design	3
HOR-245	Advanced Landscape Design	3
HOR-246	Organic Gardening	3
HOR-247	Hardscape Installation	3
HOR-248	Flower Arranger's Garden (Spring)	3
HOR-250	Western Herbal Medicine	1
HOR-251	Herbal Medicine Making	1
HOR-252	Kitchen Medicine	1
HOR-280	Horticulture/CWE	3
HOR-281	Horticulture/CWE	6
HOR-282	Horticulture/CWE	3

Hospitality & Tourism Management

CERTIFICATE

The Hospitality and Tourism Management (HTM) certificate is designed to provide students with the knowledge and tools necessary to increase success and upward mobility within the hospitality and tourism industry. The typical student will enter the program after high school or return to school to enhance their opportunities within an existing career path.

The certificate is designed so that students can choose the area of concentration (food, recreation, travel, lodging, etc.) that fits their career path.

PROGRAM OUTCOMES

Student successfully completing this program will demonstrate entry-level skills necessary for employment in the hospitality and tourism industry, in food, recreation, travel or lodging venues. Students will be proficient in technology and demonstrate the communication skills needed in the hospitality and tourism industry.

CAREERS

Career opportunities may include food service manager, hotel and lodging manager, recreational facilities and tourism industry manager.

For information contact Dale Hatfield, ext. 2361 or daleh@clackamas.edu

HOSPITALITY & TOURISM MANAGEMENT CERTIFICATE

FALL TERM		CREDITS
BA-101	Introduction to Business	4
BA-285	Human Relations in Business	4
BT-120	Personal Keyboarding [C]	2
HTM-100	Introduction to the Hospitality Industry	3
MTH-050	Technical Mathematics I	3
WR-121	English Composition	3

WINTER TERM

BA-131	Introduction to Business Computing [C]	4
BA-211	Financial Accounting I	4
BA-104	Business Math	3
HTM-102	Hotel, Restaurant, and Travel Law	3
— —	Hospitality & Tourism Management elective	3

SPRING TERM

BA-205	Solving Communication Problems w/Tech. [C]	4
BA-238	Sales	3
BA-280	Business/CWE	3
HTM-103	Marketing in the Hospitality Industry	3
— —	Hospitality & Tourism Management elective	3

Minimum credits required for certificate 52

HOSPITALITY & TOURISM MANAGEMENT ELECTIVES

HTM-104	Introduction to the Travel and Tourism Industry	3
HTM-105	Introduction to the Food & Beverage Industry	3
HTM-106	Introduction to the Lodging Industry	3
HTM-107	Sanitation & Safety for Managers	3
HTM-111	Cultural Heritage Tourism	3
HTM-112	Bed and Breakfast Operations	3
HTM-119	Introduction to Casino Management	3
HTM-123	Computer Reservation Systems	3
HTM-126	Meeting & Event Planning	3
HTM-127	Travel Sales & eCommerce	3

Human Resource Management

CERTIFICATE

This certificate is recommended for students and/or professionals currently working in the Human Resource field who wish to obtain national certification in PHR (Professional in Human Resources) from the Human Resource Certification Institute. Though this certificate is intended to enhance the qualifications of people already working in the HR field; others may wish to take the classes to advance their own skills and knowledge.

PROGRAM OUTCOMES

Completion of this program qualifies the applicant to sit for the HR certificate exam; two years experience is also required before the certificate is issued to the successful applicant. Certification in Human Resource Management, along with experience and qualifications required by employers, include the skills necessary to be an employee, management trainee, or manager in the human resource management field.

CAREERS

Career opportunities may include human resource manager, human resource assistant, information and records clerk.

For information contact Bill Waters, ext. 5062 or billw@clackamas.edu

HUMAN RESOURCE MANAGEMENT CERTIFICATE

FALL TERM		CREDITS
BA-101	Introduction to Business	4
BA-224	Human Resource Management	4
WR-101	Communication Skills: Occupational Writing	3
BA-111	General Accounting I	4
BA-226	Business Law I	4
WINTER TERM		
BA-285	Human Relations in Business	4
BA-254	Compensation and Benefits	4
BA-206	Management Fundamentals	4
MTH-050	Technical Mathematics I	3
BA-177	Payroll Accounting	3
SPRING TERM		
BA-229	Employment Law	4
BA-208	Employee Labor Relations	4
BA-217	Budgeting for Managers	3
BA-205	Solving Communication Problems With Tech. [C]	4
BA-280	Business/CWE	3
<i>Minimum credits required for certificate</i>		55

Human Services

ASSOCIATE OF APPLIED SCIENCE DEGREE

This two-year program provides a foundation in human services studies, with substantive interdisciplinary knowledge (psychology, sociology, family/human services and health and human development).

PROGRAM OUTCOMES

The Human Services Degree includes the skills necessary for participants to 1) assist social group workers and caseworkers with developing, organizing and conducting programs to prevent and resolve problems relevant to human systems and relationships, and/or 2) assist and provide support in diverse settings, such as community-based child and family support agencies, early childhood care and education, school systems, aging services field, community outreach organizations and state/local law enforcement agencies.

CAREERS

Career opportunities may include social services personnel, gerontology support personnel, criminal/juvenile justice personnel

For information contact Lynne Maloney, ext. 2527 or lynnem@clackamas.edu

HUMAN SERVICES ASSOCIATE DEGREE: 1ST YEAR

FALL TERM		CREDITS
HS-100	Introduction to Human Services	3
PSY-215	Introduction to Developmental Psychology	4
WR-101	Occupational Writing	
or WR-121	English Composition	3
— —	Related Instruction electives	6

WINTER TERM

CS-120	Survey of Computing [C]	4
MTH-050	Technical Mathematics	
or MTH-065	Algebra II or above (except MTH-199, MTH-299)	
PSY-221	Introduction to Counseling	4
— —	Related Instruction electives	6

SPRING TERM

HDF-140	Contemporary American Families	3
HS-170	Introduction to Field Experience	3
SOC-205	Social Stratification and Systems	4
— —	Related Instruction electives	6

HUMAN SERVICES ASSOCIATE DEGREE: 2ND YEAR

FALL TERM		CREDITS
HE-261	Community CPR	1
HS-280	Cooperative Work Experience - Practicum I	4
SOC-225	Social Problems	4
— —	Related Instruction electives	6

WINTER TERM

HS-154	Community Resources	3
HS-281	Cooperative Work Experience - Practicum II	4
PSY-219	Abnormal Psychology	4
— —	Related Instruction electives	6

SPRING TERM

ANT-103	Cultural Anthropology	
or SP-140	Introduction to Intercultural Communication	3-4
HS-282	Cooperative Work Experience - Practicum III	4
— —	Related Instruction electives	9-10

Minimum credits required for degree 97-100

ELECTIVES

Elective courses must be 100 level or above. They may be chosen from a variety of disciplines depending on student goals for career and further degree completion. For information contact the Human Services Advisor. There are many certificate programs that may be used to satisfy the elective requirements for this degree.

- Business Management
- Corrections/Juvenile
- Early Childhood Education & Family Studies
- Emergency Medical Technician
- Gerontology
- Instructional Assistant
- Medical Assistant

Industrial Technology

ASSOCIATE OF APPLIED SCIENCE DEGREE

The Industrial Technology degree program is designed for students who are completing training, or those who received an industry-approved certificate or journey-level certification and wish to earn an associate's degree.

PROGRAM OUTCOMES

Many occupations require completion of standardized training that is approved by industry. These occupations vary greatly. Program outcomes for the Industrial Technology program allow individual students to complete such requirements for further work in industrial and technical occupations.

CAREERS

Career opportunities will vary with the individual and the type of training the student is completing or the field in which he/she is already employed.

For information contact Sue Metcalfe, ext. 2570 or suemet@clackamas.edu

INDUSTRIAL TECHNOLOGY ASSOCIATE DEGREE REQUIREMENTS

RELATED CLASSES

Industrial Technology students will receive a maximum of 48 credits for technical-related training classes and up to 24 credits of elective occupational classes.

RELATED INSTRUCTION COURSES

A minimum of 18 credits as specified in this catalog under "Approved Related Instruction Courses" (see page 20). The computer literacy requirement must also be satisfied.

ELECTIVE OCCUPATIONAL COURSES

To complete the minimum credit hours required.

Minimum credits required for degree (requirements + electives) 90

Juvenile Corrections

CERTIFICATE

The Juvenile Corrections certificate is a one-year program developed in cooperation with the Oregon Youth Authority. Students are prepared to interview for an entry level position in a juvenile correctional facility. The certificate curriculum is challenging, but is aimed at providing the skills most desired for working within the juvenile corrections system in Oregon.

Coursework includes cooperative work experience, hands-on experience in a correctional agency, to supplement and apply knowledge acquired in academic courses.

PROGRAM OUTCOMES

Program outcomes include skills for employment in the juvenile justice system. Corrections professionals are usually qualified to move into other areas of law enforcement or social service.

CAREERS

Career opportunities are within secure facilities or in the community, and may include youth correctional counselor, juvenile detention officer, and group life coordinator.

For information contact Dick Ashbaugh, ext 2237 or dicka@clackamas.edu

JUVENILE CORRECTIONS CERTIFICATE

FALL TERM		CREDITS
CJA-232	Corrections Casework	3
CS-120	Survey of Computing [C]	4
PSY-200	Psychology as a Natural Science	4
PSY-205	Psychology as a Social Science	4
WR-121	English Composition	3
WINTER TERM		
CJA-201	Juvenile Delinquency	3
HE-205	Youth Addiction	3
PSY-219	Introduction to Abnormal Psychology	4
SOC-205	Social Stratification & Social Systems	4
WR-122	English Composition	3
SPRING TERM		
CJA-101	Introduction to Criminology	3
CJA-203	Crisis Intervention	3
CJA-230	Juvenile Corrections	3
MTH-050	Technical Math I	
	or MTH-065 Algebra II	3-4
PSY-215	Introduction to Developmental Psychology	4
ADDITIONAL REQUIREMENT		
CJA-280	Criminal Justice/Corrections/CWE (can be taken Winter or Spring term)	3
<i>Minimum credits required for certificate</i>		54-55

Landscape

CERTIFICATE

ASSOCIATE OF APPLIED SCIENCE DEGREE

The Landscape certificate and degree programs are designed for students whose concentration is within the Landscape career path. Students participate in a laboratory-style practicum class which develops a full season's experience in growing and caring for plants. Students are involved in the day-to-day operation and maintenance of CCC's extensive greenhouse and landscape facilities, arboretum, and turf management areas, including training with tools of the trade: mowers, rototillers, tractors, pesticide applicators, greenhouse equipment and pruning tools. Students also cultivate CCC's award-winning, All-American Selections Garden and landscape areas on the CCC campus.

CCC's Landscape and Horticulture programs are the only programs accredited in Oregon by the Associated Landscape Contractors of America (ALCA). This accreditation provides students with enhanced opportunities to follow national ALCA landscaping standards, to network with landscape industry professionals, to extend their knowledge about landscape standards and practices, and to attend the National ALCA Student Career Days each year.

Students may begin this program any term. Degree options include a less than one-year certificate program or a two-year associate degree program. Following the course offerings in the order listed is encouraged unless otherwise advised by the Horticulture Advisor. The certificate and associate degree programs include a cooperative work experience class and working with a horticultural employer.

PROGRAM OUTCOMES

Program outcomes include the skills necessary for entry-level employment in landscape design, landscape installation, maintenance of landscapes, tree care industry, and supply/equipment sales.

Students completing the Landscape AAS with a 2.5 GPA or higher, are eligible to take the Oregon Landscape Contractors License Exam.

CAREERS

Career opportunities include equipment sales, landscape design, installation and maintenance contractor, arborist, turf management, estate gardening, Parks Department personnel, and groundskeepers.

For information contact Elizabeth Howley, Horticulture Advisor, ext. 2389 or ehowley@clackamas.edu

OSU TRANSFER AGREEMENT

Some Horticulture classes transfer to Oregon State University as part of a bachelor's degree. Landscape students planning to continue their studies at a four-year college should consult the advisor (up to 45 credits of Horticulture classes transfer as part of a bachelor's degree). The Horticulture advisor will work with individual students in order to obtain the most recent transfer information.

LANDSCAPE CERTIFICATE

FALL TERM		CREDITS
HOR-224	Landscape Installation	3
HOR-225	Principals of Arboriculture	3
HOR-229	Basic Landscape Design	3
HOR-235	Weed Identification	2
HOR-236	Insect Identification	2

WINTER TERM

HOR-239	Tree Climber Training	2
HOR-231	Irrigation & Drainage Design	3
HOR-234	Intermediate Landscape Design	3
HOR-238	Landscape Business Operations	3

SPRING TERM

HOR-247	Hardscape Installation	3
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Minimum credits required for certificate 27

LANDSCAPE ASSOCIATE DEGREE: 1ST YEAR

FALL TERM		CREDITS
HOR-111	Horticulture Practicum (Fall)	6
HOR-123	Landscape Maintenance	3
HOR-226	Plant Identification (Fall)	3
MTH-050	Technical Mathematics I	
	or MTH-065 Algebra II (or above)	3-5
WR-101	Communication Skills: Occ. Writing	3

WINTER TERM

HOR-222	Horticulture Computer Applications	2
HOR-131	Tree & Shrub Pruning (Winter)	3
HOR-132	Pesticide Selection & Use	3
HOR-133	Horticulture Practicum (Winter)	6
HOR-227	Plant Identification (Winter)	3

SPRING TERM

HOR-140	Soils & Fertilizers	3
HOR-143	Horticulture Practicum (Spring)	6
HOR-145	Turf Installation & Maintenance	3
HOR-228	Plant Identification (Spring)	3
SP-100	Basic Speech Communication	3

SUMMER TERM

HOR-281	Horticulture/CWE	6
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LANDSCAPE ASSOCIATE DEGREE: 2ND YEAR

FALL TERM		CREDITS
HOR-224	Landscape Installation	
	or HOR-225 Principals of Arboriculture	3
HOR-229	Basic Landscape Design	3
HOR-235	Weed Identification	
	or HOR-236 Insect Identification	2
SPN-101	First Year Spanish	4

WINTER TERM

HOR-230	Equipment Operation & Maintenance	3
HOR-231	Irrigation & Drainage Design	3
HOR-234	Intermediate Landscape Design	
	or HOR-213 Computer Aided Landscape Design	3
HOR-237	Disease Identification	
	or HOR-239 Tree Climber Training	2
HOR-238	Landscape Business Operations	3

SPRING TERM

HOR 243	Tree & Shrub Pruning	
	or HOR- 245 Advanced Landscape Design	
	or HOR- 240 Irrigation & Drainage Practices	3
HOR- 247	Hardscape Installation	3
HE- 252	First Aid/CPR	3
PSY- 101	Psychology of Human Relations	3

Minimum credits required for degree 97-99 credits

Manufacturing Technology

CERTIFICATE ASSOCIATE DEGREE OF APPLIED SCIENCE DEGREE PROFESSIONAL UPGRADE

Coursework in Manufacturing Technology prepares students for careers in high-tech manufacturing by producing products to exacting industrial standards utilizing current manual and computer-aided machine tool technology. Our instructional philosophy promotes integrating real world manufacturing situations with structured theory and practicum in the classroom and laboratory. Many of our classes are taught in a flexible, open lab format and students may enter the program any term.

Individualized daytime and evening instruction is provided in the operation of machine tools such as: lathes, mills, surface and cylindrical grinders, and common machine shop equipment. Included in the degree program is the study of computer numerical control (CNC) programming and machining for milling, turning and electrical discharge machining (EDM), as well as courses in computer-aided manufacturing (CAM) utilizing current industrial CAD/CAM software. Quality control is stressed while students are taught a wide range of measuring and inspection techniques. Other topics include courses offered in welding, materials science, and basic electricity. Many students enroll in our courses to upgrade existing job skills and several of our courses satisfy the continuing education unit (CEU) requirements of local apprenticeships and trade organizations.

PROGRAM OUTCOMES

Program outcomes include the skills necessary for entry-level technician and operator positions in manufacturing technology trades. Program outcomes also include the skills necessary for employment as apprentice machinist, leading to careers in tool and die making, maintenance machining, mold and model making.

CAREERS

Career opportunities may include machine tool operator, CNC programmer/operator, and CAD technicians.

SHORT TERM TRAINING

For students who need a quick-entry strategy into the workforce, an individualized education and employment plan can be created that concentrates the knowledge and skills necessary to start or change a career path. Please see a faculty advisor for more information. A short term training certificate is available. For information contact Mike Mattson, Department Chair, ext. 2483 or mattsonm@clackamas.edu; or the Manufacturing Department, ext. 2062.

MANUFACTURING ENGINEERING TECHNOLOGY (OIT Transfer Courses)

The CCC Manufacturing Technology Department, in partnership with Oregon Institute of Technology (OIT), offers a significant number of transferable classes into OIT's Manufacturing Engineering Technology degree program. Contact the Manufacturing department, ext. 2062 for more information.

COMPUTER-AIDED DRAFTING/COMPUTER-AIDED MANUFACTURING (CAD/CAM) DEGREE

See degree program on pages 31-32.

MANUFACTURING TECHNOLOGY CERTIFICATE

FALL TERM		CREDITS
MFG-104	Print Reading	2
MFG-105	Dimensional Inspection	2
MFG-107	Industrial Safety & OSHA	3
MFG-111	Machine Tool Fundamentals I	9
MTH-050*	Technical Mathematics I	3
WINTER TERM		
MFG-109	Computer Literacy for Technicians [C]	
	or MFG-209 Programming and Automation for Mfg. [C]	3
MFG-112	Machine Tool Fundamentals II	9
WR-101*	Comm. Skills: Occup. Writing	3
— —	Human Relations elective	3
SPRING TERM		
MFG-113	Machine Tool Fundamentals III	6
MFG-221	Materials Science	3
MFG-280	Manufacturing Technology/CWE	4
WLD-150	Welding Processes	4
<i>Minimum credits required for certificate</i>		54

MANUFACTURING TECHNOLOGY ASSOCIATE DEGREE

FIRST TERM		CREDITS
MFG-104	Print Reading	2
MFG-105	Dimensional Inspection	2
MFG-111	Machine Tool Fundamentals I	9
MTH-050*	Technical Mathematics I	3
SECOND TERM		
MFG-107	Industrial Safety & OSHA	3
MFG-109	Computer Literacy for Technicians [C]	
	or MFG-209 Programming and Automation for Mfg. [C]	3
MFG-112	Machine Tool Fundamentals II	9
WR-101*	Comm. Skills: Occup. Writing	3
THIRD TERM		
MFG-113	Machine Tool Fundamentals III	9
WLD-150	Welding Processes	4
— —*	Human Relations elective	3
FOURTH TERM		
MFG-106	Applied Geometric Dimensioning & Tolerancing	
	or CDT-111 Geometric Dimensioning & Tolerancing	2-3
MFG-201	CNC I: Setup & Operation	4
MFG-204	Computer-Aided Manufacturing I	4
MFG-211	Machine Tool Fundamentals IV	6
MTH-080*	Technical Mathematics II	3

FIFTH TERM

MFG-202	CNC II: Programming & Operation	4
MFG-205	Computer-Aided Manufacturing II	4
MFG-280	Manufacturing Technology/CWE	4
PE/HE/HPE*	PE/Health elective	3

SIXTH TERM

MFG-203	CNC III: Applied Programming & Operation	3
MFG-206	Computer-Aided Manufacturing III	2
MFG-221	Materials Science	3
— —*	Related Instruction elective	3

Minimum credits required for degree 95-96

*Substitute college transfer courses for these courses if you plan to continue your education at a higher education institution. It is recommended that you consult with a faculty advisor or a staff member in the Advising & Counseling Center for the transfer requirements of the specific advanced program or school.

Marketing

CERTIFICATE

This certificate focuses on identifying customer needs, developing goods and services to satisfy those needs, communicating information about products/services to potential customers and distributing the product.

PROGRAM OUTCOMES

Students who successfully complete this certificate will be qualified for entry-level marketing positions in areas such as retail and wholesale sales, market research, advertising, and distribution. Skills developed in this certificate will enhance the worker's employability and advancement potential in both technological and hard skills as well as the soft skills required for designing and implementing marketing programs in the workplace.

CAREERS

Career opportunities may include wholesale and manufacturing sales representative, insurance and financial sales agents, and marketing and advertising assistants.

For information contact Dale Hatfield, ext. 2361 or daleh@clackamas.edu; Joan Ryan, ext. 2363 or joanr@clackamas.edu

MARKETING CERTIFICATE

FALL TERM		CREDITS
BA-101	Introduction to Business	4
BA-131	Introduction to Business Computing [C]	4
BA-224	Human Resource Management	4
WR-121	English Composition	3
WINTER TERM		
BA-104*	Business Math	3
BA-156	Business Forecasting	3
BA-223	Principles of Marketing	4
BA-285	Human Relations in Business	4

SPRING TERM

BA-205	Solving Communication Problems w/Tech. [C]	4
BA-211	Financial Accounting I	4
BA-226	Business Law I	4
BA-238	Sales	3
BA-280	Business/CWE	3

Minimum credits required for certificate 47

* For this certificate, this course meets the Related Instruction Computation requirement.

Marketing & Management

ASSOCIATE OF APPLIED SCIENCE DEGREE

This program focuses on identifying customer needs, developing goods and services to satisfy those needs, communicating information about products to potential customers, and distributing the product to customers. This degree is designed to meet the needs of an entrepreneur who has or starts his own business, as well as to enhance the skills and employability of those already in business and management careers.

PROGRAM OUTCOMES

Upon completion of this program, students will demonstrate the skills necessary for entry-level employment in areas such as retail and wholesale sales, marketing management, market research, advertising and distribution. Students will prepare effective presentations, develop an effective marketing plan, prepare winning sales presentations, and prepare themselves for upward mobility in the marketing and management fields.

CAREERS

Career opportunities may include supervisors or manager of retail sales workers, sales associate, marketing manager, call center supervisor, and account manager.

For information contact Dale Hatfield, ext. 2361 or daleh@clackamas.edu; Joan Ryan, ext. 2363 or joanr@clackamas.edu

MARKETING & MANAGEMENT ASSOCIATE DEGREE: 1ST YEAR

FALL TERM		CREDITS
BA-101	Introduction to Business	4
BA-104*	Business Math	3
BA-224	Human Resource Management	4
WR-121	English Composition	3
WINTER TERM		
BA-131	Introduction to Business Computing [C]	4
BA-156	Business Forecasting	3
BA-223	Principles of Marketing	4
BA-285	Human Relations in Business	4
SPRING TERM		
BA-205	Solving Communication Problems w/Tech. [C]	4
BA-211	Financial Accounting I	4
BA-226	Introduction to Business Law I	4
BA-238	Sales	3

Continued

MARKETING & MANAGEMENT ASSOCIATE DEGREE: 2ND YEAR

FALL TERM		CREDITS
BA-206	Management Fundamentals	4
BA-212	Financial Accounting II	4
BA-218	Personal Finance	3
BA-239	Advertising	4
PE/HE/HPE	PE/Health elective	1

WINTER TERM		CREDITS
BA-213	Decision Making w/Accounting Information	4
BA-222	Financial Management	3
BA-227	Business Law II	4
EC-201	Micro-Economics	4
BA-249	Retailing	3

SPRING TERM		CREDITS
BA-217	Budgeting for Managers	3
BA-225	Business Report Writing	3
BA-261	Consumer Behavior	4
BA-280	Business/CWE	3
— —	BA/BT elective	4

Minimum credits required for degree 95

* For this degree, this course meets the Related Instruction Computation requirement.

Medical Assistant

CERTIFICATE

Medical assisting is an allied health profession. Medical assistants function as members of the healthcare delivery team and perform administrative, clinical, and transdisciplinary functions. The Medical Assistant program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), (35 East Wacker Drive, Suite 1970, Chicago, IL 60601-2208 or (312) 553-9355), on recommendation of the Curriculum Review Board of the American Association of Medical Assistants' Endowment (AAMAE).

Admission to the Medical Assistant program is during spring term to enroll for fall classes. Admission is by special application process only. Specific skill levels are required in reading, writing, and math. Placement tests are required prior to admission to the program. Applicants are advised that there is a certain level of dexterity and physical strength involved for successful completion of the program. A physical examination by a licensed healthcare provider, immunizations and a criminal background check are required. Students will participate in unpaid, supervised externships in the ambulatory care setting.

Application packets with admission procedures and requirements are available from the Enrollment Services Center, the Advising & Counseling Center, or at <http://depts.clackamas.edu/healthsciences>

PROGRAM OUTCOMES

Upon successful completion of the program, students will be eligible to sit for the American Association of Medical Assistants (AAMA) National Certification exam. Students will be prepared for entry level employment as a medical assistant.

CAREERS

Career opportunities may include but are not limited to: employment in the ambulatory care setting, employment in the acute care setting, insurance billing and coding, administration and phlebotomy.

For information contact Maureen Mitchell, ext. 2910 or maureenm@clackamas.edu

MEDICAL ASSISTANT CERTIFICATE

FALL TERM		CREDITS
BI-055	Introduction to Human Biology	
or BI-102	General Biology (prerequisite: BI-101)	3-4
MA-145	Medical Coding & Health Info. Management	3
CS-120	Survey of Computing [C]	4
MA-110	Medical Terminology	3
MA-112	Medical Office Practice	4

WINTER TERM

MA-116	Introduction to Medications	2
MA-117	Clinical Lab Procedures I	2
MA-118	Examination Room Techniques	3
MA-119	Medical Assistant Practicum I	4
MTH-054*	Math for Health Care Professionals	3
WR-101	Communication Skills: Occupational Writing	
or WR-121	English Composition	3

SPRING TERM

MA-115	Phlebotomy	1
MA-120	Medical Assistant Practicum II	6
MA-121	Clinical Lab Procedures II	2
MA-125	Fundamentals of Human Development	
or PSY-215	Introduction to Developmental Psychology	3-4
PSY-101	Human Relations	3
SP-100	Basic Speech Communication	
or SP-218	Interpersonal Communication	3-4

Minimum credits required for certificate 52-55

Current First Aid and CPR for Healthcare Professionals (AHA or ASHI) certificates are required during practicums, and must be taken prior to winter term practicum.

Note: All clinical/practicum courses are "Pass/No Pass". All other courses are letter grades and must be passed with "C" or better.

Medical Office Administrative Assistant

CERTIFICATE

The Medical Office Administrative Assistant certificate provides students with a strong foundation of basic skills in front office practice and procedures. Emphasis is placed on critical thinking and human relations skills. Coursework includes Related Instruction requirements and industry-standard skill requirements.

PROGRAM OUTCOMES

Upon completion of this program, students will be qualified to work successfully in the front office of a medical office, clinic, or patient-services business. Students will have the hard and soft skills needed to work under pressure, meeting the changing and diverse office needs of staff and patients.

CAREERS

Career opportunities may include opportunities to work at physicians' offices, hospitals, drug firms, insurance companies, and medical departments of the government or large corporations.

For information contact Carol Middendorf, ext. 2412 or carolm@clackamas.edu

MEDICAL OFFICE ADMINISTRATIVE ASSISTANT CERTIFICATE

FALL TERM	CREDITS
BI-055 Introduction to Human Biology	3
BT-112 Front Desk/Medical Office Practice	3
BT-124 Business Editing I	3
BT-160 Word I [C]	3
MA-110 Medical Terminology	3
WINTER TERM	
BA-211 Financial Accounting I or BA 111 General Accounting I	4
BA-285 Human Relations in Business	4
BA-104* Business Math	3
BT-125 Business Editing II	3
BT-145 Medical Insurance and Billing	3
SPRING TERM	
BA-101 Introduction to Business	4
BA-280 Business/CWE	3
BT-113 Medical Coding I for the Physician's Office	3
WR-121 English Composition	3
BA/BT Elective	3

Minimum credits required for certificate 48

* For this certificate, this course meets the Related Instruction Computation requirement.

Microelectronics Systems Technology

**CERTIFICATE
ASSOCIATE OF APPLIED SCIENCE DEGREE
PROFESSIONAL UPGRADE**

This program prepares students for entry into the microelectronics and semiconductor industries. Coursework focuses on wafer manufacturing, integrated circuit fabrication, component manufacturing, microelectronic assembly and equipment maintenance. Specific skill areas include: silicon materials fabrication, silicon manufacturing, semiconductor processing, microcontamination and particle control, troubleshooting of equipment and systems, microlithography, ion implantation, etch and chemical vapor deposition.

PROGRAM OUTCOMES

Program outcomes include the skills necessary for entry-level employment into the microelectronics and semiconductor industries as technicians, operators and processors.

CAREERS

Career opportunities may include fabrication technician, equipment technician, and product test technician.

For information contact Mike Mattson, ext. 2483 or mattsonm@clackamas.edu

MICROELECTRONICS SYSTEMS TECHNOLOGY CERTIFICATE

FIRST TERM	CREDITS
EET-112 Electronic Test Equipment & Soldering	1
EET-137 DC Circuits	4
EET-139 Principles of Troubleshooting I	2
MFG-107 Industrial Safety & OSHA	3
MTH-050* Technical Mathematics I	3
SM-150 Semiconductor Processing I	2
WR-101* Communication Skills: Occupational Writing	3
SECOND TERM	
EET-141 Transient Circuit Analysis & Network Theorems	4
EET-157 Digital Logic I	3
ESH-100 Environmental Regulations	2
MFG-109 Computer Literacy for Technicians [C]	3
MTH-080* Technical Mathematics II	3
SM-160 Semiconductor Processing II	2
THIRD TERM	
EET-127 Semiconductor Circuits I	4
EET-142 AC Circuits	4
MTH-085* Technical Mathematics III	3
SM-170 Semiconductor Processing III	2
SM-280 Electronics & Microelectronics/CWE	2
SP-100* Basic Speech Communication	3

Minimum credits required for certificate 53

MICROELECTRONICS SYSTEM TECHNOLOGY ASSOCIATE DEGREE: 1ST YEAR

Complete certificate program.

Continued

**MICROELECTRONICS SYSTEMS TECHNOLOGY ASSOCIATE
DEGREE: 2ND YEAR**

FOURTH TERM		CREDITS
CH-104	Introductory Chemistry	5
EET-215	Principles & Applications of Mfg. Equip. Tech. I	2
EET-239	Principles of Troubleshooting II	2
MFG-104	Print Reading	2
— —	Human Relations elective	3

FIFTH TERM		CREDITS
EET-250	Linear Circuits	3
MFG-140	Fluid Power	3
MFG-209	Programming and Automation For Mfg. [C]	3
SM-136	Photolithography	2
SM-280	Electronics & Microelectronics/CWE	2
TPH-100	Technical Physics	3

SIXTH TERM		CREDITS
EET-230	Laser and Fiber Optics	3
MFG-124	Statistical Process Control	3
MFG-133	Programmable Logic Controllers	3
SM-229	Vacuum Technology	2
PE/HE/HPE	PE/Health electives	3

Minimum credits required for degree (requirements & electives) 97

*Substitute college transfer courses for these courses if you plan to continue your education at a higher education institution. It is recommended that you consult with a faculty advisor or a staff member in the Advising & Counseling Center for the transfer requirements of the specific advanced program or school.

**MANUFACTURING ENGINEERING TECHNOLOGY
(OIT Transfer Courses)**

The Manufacturing Technology Department, in cooperation with Oregon Institute of Technology (OIT), offers a number of transferable microelectronics classes into OIT's Manufacturing Engineering Technology degree program. Contact Mike Mattson at 503-657-6958, ext. 2483 or mattsonm@clackamas.edu, for more information.

Music Technology

CERTIFICATE

The Music Technology certificate gives students the core skills needed to enter the sound and music production industry.

PROGRAM OUTCOMES

Program outcomes include the skills necessary for entry-level employment into a variety of music and sound careers.

CAREERS

Careers include recording engineer, live sound engineer, media and sound post-production for internet companies, sound/music for video games, sound/media engineer for TV, recording/sound for advertising production, video post-production engineer, sound engineer for radio, video production engineer, film sound

recording engineer, film post production for mixed media, film post production for sound only, film sound designer (FX), film Foley artist, technical support for music production software companies, technical development for music production hardware and software, sound technical development for software companies.

For information contact Tom Wakeling, ext. 2434 or wakelingt@clackamas.edu

MUSIC TECHNOLOGY CERTIFICATE

FALL TERM		CREDITS
MUS-142	Intro to Electronic Music: MIDI Sequencing I	3
MUS-107	Intro to Audio Recording I	3
MUS-140	Careers in Music	3
WR-101	Communication Skills: Occupational Writing	3
— —	Music Basics (see list)	3
— —	Music Electives (see list)	2

WINTER TERM		CREDITS
MUS-143	Intro to Electronic Music: MIDI Sequencing II	3
MUS-108	Intro to Audio Recording II	3
MUS-141	Intro to the Music Business [C]	3
MTH-050	Technical Mathematics I	
— —	or MTH-105 Intro to Contemporary Math	3-4
— —	Music Basics (see list)	3
— —	Music Electives (see list)	2

SPRING TERM		CREDITS
MUS-144	Intro to Electronic Music: MIDI Sequencing III	3
MUS-109	Intro to Audio Recording III	3
SP-100	Basic Speech Communication (or SP-126, SP-218, SP-140)	3-4
MUS-280	Music/CWE	2
— —	Music Basics (see list)	3
— —	Music Electives (see list)	2

Minimum credits required for certificate 50-52

MUSIC BASICS

Complete 9 credits from the following:

MUP-100	Individual Instruction—Instrument or Voice	1
MUS-101	Music Fundamentals	3
MUS-102	Music Fundamentals	3
MUS-103	Music Fundamentals	3
MUS-105	Music Appreciation	3
MUS-131	Piano for Pleasure I	3
MUS-132	Piano for Pleasure II	3
MUS-133	Piano for Pleasure III	3
MUS-134	Group Voice I	3
MUS-135	Group Voice II	3
MUS-136	Group Voice III	3
MUS-137	Group Guitar I	3
MUS-138	Group Guitar II	3
MUS-139	Group Guitar III	3
MUS-202	History of Classical Music	4
MUS-205	History of Jazz	4
MUS-206	History of Rock Music	4

MUSIC ELECTIVES

Complete 6 credits from the following:

MUS-101	Music Fundamentals	3
MUS-102	Music Fundamentals	3
MUS-103	Music Fundamentals	3
MUS-105	Music Appreciation	3
MUS-130	Music and Media	1
MUS-131	Piano for Pleasure I	3
MUS-132	Piano for Pleasure II	3
MUS-133	Piano for Pleasure III	3
MUS-134	Group Voice I	3
MUS-135	Group Voice II	3
MUS-136	Group Voice III	3
MUS-137	Group Guitar I	3
MUS-138	Group Guitar II	3
MUS-139	Group Guitar III	3
MUS-145	Intro to Digital Sound, Video & Animation	3
MUS-146	Entertainment Law & New Media	3
MUP-100	Individual Lessons: Instrumental/Vocal	1
MUP-102	Concert Band	2
MUP-104	Pep Band/Combo-Improv	1
MUP-105	Jazz Ensemble	2
MUP-121	Clackamas Chorale	2
MUP-122	Chamber Choir	2
MUP-125	Jazz Singers/Mainstream	2
MUS-202	History of Classical Music	4
MUS-205	History of Jazz	4
MUS-206	History of Rock Music	4

Network & Microcomputer Specialist

**CERTIFICATE
ASSOCIATE OF APPLIED SCIENCE DEGREE**

Microcomputer specialists install, maintain, upgrade, and troubleshoot PC hardware.

Students may earn either a one-year certificate or a two-year Associate of Applied Science degree. The coursework emphasizes development of analytical and problem-solving skills. Cooperative Work Experience (CWE) is supervised on-the-job employment that supplements the academic classroom environment.

Prerequisites for first term classes include completed coursework or placement out of CS-120 Survey of Computing, WR-095 Paragraph to Essay, and MTH-065 Algebra II. This program is an open program, meaning that students may take any class in the program for which they have completed the prerequisite.

PROGRAM OUTCOMES

Program outcomes include skills for entry-level positions in network administration and microcomputer support. Network specialists, using software such as Novell, Linux/Unix, or Windows, work with organizational computers to keep hardware and software operational and provide secure access to business information.

CAREERS

Career opportunities may include network administrator, computer support specialist, hardware technician, computer service technician, field engineer, customer service engineer, computer technician, and PC/LAN support specialist.

For information contact Linda Anderson, ext. 2539 or linda@clackamas.edu

NETWORK & MICROCOMPUTER CERTIFICATE

FALL TERM		CREDITS
CS-121	Computer Applications [C]	3
CS-140	Operating Systems I	4
CS-160	Computer Tech Orientation	2
CS-225	Computer End-User Support	3
MTH-092	Math for Computer Technicians	4
WINTER TERM		
CS-140D	Operating Systems I: Command Line	3
CS-179	Data Communications Concepts	3
CS-227	PC Hardware & Repair I	4
CS-240W	Operating Systems II: Windows	3
WR-101	Communications Skills: Occupational Writing	
or WR-121	English Composition	3
SPRING TERM		
CS-125H	Web Site Design and HTML	3
CS-228	PC Hardware & Repair II	4
CS-279W	LAN I: Windows Server Administration	4
CS-280	Computer Science/CWE	3
— —	Human Relations elective (recommended: BA-285 or PSY-101)	3-4

Minimum credits required for certificate 49-50

Prerequisites to enter the program: MTH-065, CS-120, and WR-095 or placement into WR-101 or WR-121.

**NETWORK & MICROCOMPUTER SPECIALIST
ASSOCIATES OF APPLIED SCIENCE DEGREE: 1ST YEAR**

Complete certificate program.

**NETWORK & MICROCOMPUTER SPECIALIST
ASSOCIATES OF APPLIED SCIENCE DEGREE: 2ND YEAR**

FALL TERM		
CS-135DB	Advanced Database	3
CS-140U	Operating Systems I: Linux/Unix	3
CS-229	Network System Repair & Troubleshooting	4
CS-288W	LAN II: TCP/IP	4
— —	Related Instruction elective	3-4
WINTER TERM		
CS-240U	Operating Systems II: Linux/Unix	3
CS-279N	LAN I: Novell Administration	4
CS-287X	Microsoft Exchange Server	2
CS-289I	Web Server Administration	2
HE-252	First Aid	
or HPE-295	Health & Fitness for Life	3
— —	Related Instruction elective	3-4

Continued

SPRING TERM

CS-280	Computer Science/CWE	6
CS-284	Network Security	3
CS-289A	Web Server Administration: Apache	2
— —	Related Instruction elective	3

Minimum credits required for degree 97-100

RECOMMENDED ELECTIVES

Complete at least 9 credits from the following:

BA-101	Introduction to Business	4
— —	Any computer science course numbered 125 or above except: CS-178, CS-178E, and CS-295E	

Note: Students may not take more than 6 credits of CWE in a term.

Nursing

ASSOCIATE OF APPLIED SCIENCE DEGREE

The Nursing program is a limited entry, six term program leading to an Associate of Applied Science in Nursing which is approved by the Oregon State Board of Nursing.

CCC Nursing Program students who are interested in earning a bachelor's degree may apply for admission to OHSU, Bachelor of Science in Nursing program and have their CCC credits apply toward completion. Admission into the nursing program is by special application. A physical examination by a licensed healthcare provider, immunizations and a criminal background check are required. Drug use and or conviction of a felony may result in the Oregon State Board of Nursing denying licensure.

PROGRAM OUTCOMES

Upon completion of the program, graduates are eligible to take the national examination (NCLEX-RN) for registered nurse licensure. Students will be prepared for entry level employment as a RN.

CAREERS

Career opportunities may include but are not limited to: entry level employment as a registered nurse in the acute care setting, sub-acute care setting and the ambulatory care setting.

Information regarding the program, the application process and pre-nursing academic advising sessions is available at <http://depts.clackamas.cc.or.us/healthsciences/nursing.htm>

NURSING ASSOCIATE DEGREE: PREREQUISITES

COURSE		CREDITS
BI-231	Human Anatomy/Physiology I	4
BI-232	Human Anatomy/Physiology II	4
BI-233	Human Anatomy/Physiology III	4
BI-234	Introductory Microbiology	4
WR-121	English Composition	3
CS-120	Survey of Computing [C] (or equivalent)	0-4

NOTE: Courses listed above have prerequisites. See course descriptions for those requirements. Courses must be completed by the end of Summer Term 2005

NURSING ASSOCIATE DEGREE: 1ST YEAR

FALL TERM		CREDITS
MTH-054**	Math For Health Care Professionals	3
NUR-101	Nursing I	4
NUR-101C	Clinical/Lab Application	4
NUR-112	Discipline of Professional Nursing I	1
PHC-211*	Pharmacology I	2
— —	CPR Certification or PE-185	0-1

WINTER TERM

NUR-102	Nursing II	4
NUR-102C	Clinical/Lab Application	4
NUR-113	Discipline of Professional Nursing II	1
PHC-212*	Pharmacology II	2

SPRING TERM

NUR-103	Nursing III	4
NUR-103C	Clinical/Lab Application	4
NUR-114	Discipline of Professional Nursing III	1

ADDITIONAL REQUIRED FIRST YEAR COURSES:

FN-225*+	Nutrition	4
PSY-215*+	Introduction to Developmental Psychology	4
— —*+	Approved elective	3

NURSING ASSOCIATE DEGREE: 2ND YEAR

FALL TERM		CREDITS
NUR-201	Nursing IV	4
NUR-201C	Clinical/Lab Application	6
NUR-212	Discipline of Professional Nursing IV	1

WINTER TERM

NUR-202	Nursing V	4
NUR-202C	Clinical/Lab Application	6
NUR-213	Discipline of Professional Nursing V	1
— —*	Approved elective	3

SPRING TERM

NUR-203	Nursing VI	4
NUR-203C	Clinical/Lab Application	6
NUR-214	Discipline of Professional Nursing VI	1
— —*	Approved elective	3

Minimum credits required for degree 103-108

* Courses considered support courses and may be taken prior to admission to the Nursing program.

**May not be substituted or waived.

+ Courses which must be completed prior to fall term of the second year.

Students must achieve "C" or higher grades in all required courses (including prerequisites) prior to advancing to the next term.

APPROVED ELECTIVES

ANT-103	Cultural Anthropology	4
CH-106	Introductory Chemistry	5
CJA-203	Crisis Intervention	3
CLA-100	Introduction to Healthcare	2
HD-144	Introduction to Assertiveness	1
HD-145	Stress Management	1
HD-146	Values Clarification	1
HD-147	Decision Making	1
HD-148	Dealing With Depression	1
HD-153	Managing Conflict in Your Life	1
HD-154	Building Self-Confidence	1
HE-151	Body & Drugs	3

HE-205	Youth Addiction	3
HE-249	Mental Health	3
HE-250	Personal Health	3
HE-255	Body & Alcohol	3
MA-110	Medical Terminology	3
MA-115	Phlebotomy	1
MTH-095	Algebra III	4
MTH-111	College Algebra	5
MTH-243	Probability & Statistics	4
NUR-160	Fluid & Electrolytes	2
NUR-217	EKG Interpretation	1
NUR-288	Physical Assessment	3
PHL-102	Ethics	4
PHL-103	Critical Reasoning	4
PHL-205	Moral Issues	4
PSY-101	Human Relations	3
PSY-142	Personal Development	3
PSY-200	Psychology as a Natural Science	4
PSY-205	Psychology as a Social Science	4
PSY-214	Introduction to Personality	4
PSY-216	Introduction to Social Psychology	4
PSY-218	Introduction to Experimental Psychology	4
PSY-219	Introduction to Abnormal Psychology	4
PSY-221	Introduction to Counseling	4
PSY-231	Introduction to Human Sexuality	4
PSY-240	Interpersonal Awareness & Growth	4
SOC-204	Introduction to Sociology	4
SOC-205	Social Stratification and Social System	4
SOC-206	Institutions and Social Change	4
SOC-223	Psycho-Social Aspects of Aging	4
SOC-225	Social Problems	4
SOC-230	Perspectives on Aging	4
SOC-231	Health & Biological Aspects of Aging	3
SOC-232	Encounters with Death	3
SP-126	Communication Between Sexes	4
SPN-101	First-Year Spanish	4
SPN-102	First-Year Spanish	4
SPN-103	First-Year Spanish	4
SPN-120	Spanish for Health Professionals	3
SPN-201	Second-Year Spanish	4
SPN-202	Second-Year Spanish	4
SPN-203	Second-Year Spanish	4
WR-122	English Composition	3
WR-123	English Composition	3
WR-227	Technical Report Writing [C]	3

NOTE: Some of the courses listed above have prerequisites. See course descriptions for those requirements.

Occupational Skills Training

CERTIFICATE

The Occupational Skills Training program provides the opportunity for students to receive hands-on training in a specific occupational area. This program is designed for students who need work-based training and classroom instruction to be employable. The program is open-entry/open-exit, allowing students to begin their training at any time. Individualized training plans are developed in consultation with the student, work-site trainer, CCC faculty and program coordinator.

Students in this program are required to participate in a supervised and structured work-based training in addition to classroom instruction. The program utilizes local businesses as training sites. Students choose training from many different occupational areas.

To register, the Occupational Skills coordinator and student meet to assess the compatibility of the student's career goals with the Occupational Skills program.

PROGRAM OUTCOMES

Individualized training curriculum and employment plan, which describes the skills and knowledge necessary for the student to become competitively employable.

Contact with employers beyond what would ordinarily be available through an application process

Increased occupational skills through hands on training provided by an employer and through general education and occupational related classroom instruction by CCC instructors.

CAREERS

Career opportunities may be available in a variety of occupations, depending on the individual goals, skills and aptitude of the student, and the availability of local training sites.

For information contact the Occupational Skills office at ext. 2085 or ext. 2232.

OCCUPATIONAL SKILLS TRAINING CERTIFICATE

PROGRAM REQUIREMENTS

OST-180	Occupational Skills Training	24
— —	Occupational Related Courses	15

RELATED INSTRUCTION REQUIREMENTS

WR-101	Communication Skills: Occupational Writing	3
MTH-050	Technical Mathematics I	3
— —	Computer Literacy elective	2-3
— —	Human Relations elective	3

Minimum credits required for certificate 50-51

Office Assistant

CERTIFICATE

This program provides a strong foundation of basic skills in office administration. Emphasis is placed on critical thinking and human relations skills. Coursework includes Related Instruction requirements, industry-standard computer programs, and specific business and office administration courses.

PROGRAM OUTCOMES

Students completing this program will be eligible for entry-level employment in a variety of general office positions such as office clerk, receptionist, data entry clerk, office assistant, or general office support leading to positions (with experience) as an administrative assistant, legal assistant, or office manager.

CAREERS

Career opportunities may include administrative assistant, legal secretary and medical secretary.

For information contact Tanya Patrick, ext. 2426 or tanyap@clackamas.edu

OFFICE ASSISTANT CERTIFICATE

FALL TERM		CREDITS
BA-101	Introduction to Business	4
BA-104*	Business Math	3
BT-122	Keyboarding Skill Building	2
BT-124	Business Editing I	3
BT-160	Word I [C]	3
WINTER TERM		
BA-285	Human Relations in Business	4
BT-125	Business Editing II	3
BT-161	Word II [C]	3
BT-176	Excel [C]	3
WR-121	English Composition	3
SPRING TERM		
BA-280	Business/CWE	3
BA-111	General Accounting I	
or BA-211	Financial Accounting I	4
BT-170	Access [C]	3
BT-216	Office Procedures	4
BT-262	Integrated Projects	
or BT-181	FrontPage	3

Minimum credits required for certificate 48

* For this certificate, this course meets the Related Instruction Computation requirement.

Paraeducator

CERTIFICATE

The Paraeducator certificate program is designed to meet the professional development needs of teacher assistants. Coursework provides a basic foundation in theory and practical application in how children learn, teaching strategies, developing positive relationships with students, integrating current technology into the learning environment, addressing the needs of special-need students and the role of the classroom in a multicultural society.

Coursework includes related instruction requirements, cooperative work experience and core courses in education that are scheduled in late afternoons to meet the needs of currently employed teacher assistants and students exploring educational careers.

The No Child Left Behind Act of 2002 now mandates that paraeducators who work in Title I schools have two years of college, an associate degree, or pass a competency test equivalent to sophomore level coursework in reading, writing, math and teaching strategies.

PROGRAM OUTCOMES

Completion of the Paraeducator certificate program provides more than half the necessary credits for the two-year requirement as well as a strong foundation in education and teaching. Completion of the remaining requirements include the skills necessary to work as a teacher assistant in a variety of public and private elementary and secondary school settings.

PORTLAND STATE UNIVERSITY TRANSFER AGREEMENT

Portland State University will accept the CCC Paraeducator Certificate as part of a 90 credit Associate of General Studies. Talk with a staff member in the Advising & Counseling Center at CCC, or Shera Hunn-Felde at ext. 5047, for requirements.

CAREERS

Career opportunities may include paraeducator positions in public or private elementary or secondary schools.

For information contact Shera Hunn-Felde, ext. 5047 or sherah@clackamas.edu

PARAEDUCATOR CERTIFICATE

FALL TERM		CREDITS
ED-100	Introduction to Education	3
ED-131	Instructional Strategies	3
ED-229	Learning and Development	3
WR-121	English Composition	3
WINTER TERM		
ED-113	Instructional Strategies (Language Arts)	3
ED-169	Overview of Students with Special Needs	3
ED-200	Foundations of Education	3
ED-280	Education/Cooperative Work Experience	3-6

SPRING TERM

CS-121E	Computer Applications for Educators	3
ED-114	Instructional Strategies (Math/Science)	3
ED-130	Classroom Management	3
ED-254	Instructional Strategies (ELL students)	3

SUMMER TERM

ED-235	Educational Technology	3
ED-258	Multicultural Education	3
MTH-065	Algebra II	4
RD-090	Intermediate Reading Skills*	3

Minimum credits required for certificate 49-52

*The reading requirement may be challenged in the testing center.

Project Management

CERTIFICATE

This program is designed for students who are interested in upgrading their professional skills, those who want to learn new and valuable personal and professional skills, and those who might be interested in pursuing the Project Management two-year AAS degree.

PROGRAM OUTCOMES

Program outcomes include the skills necessary for gaining entry-level employment in a variety of business and management settings including utilities, manufacturing, merchandising, retail sales, construction, consulting, government, and non-profit organizations. This program prepares the student to continue working toward an AAS degree in project management or another closely related AAS degree.

CAREERS

Career opportunities include career enhancement such as more marketable skills in one's current employment or job opportunities in a project management training program.

For information contact Bill Waters, ext. 5062 or billw@clackamas.edu

PROJECT MANAGEMENT CERTIFICATE

COURSE	CREDITS
BA-120	Project Team Tools 3
BA-121	Project Management: Workshop 3
BA-122	Project Management: Teamwork 3
BA-123	Project Management: Leadership and Motivation 3
BA-124	Project Management: Negotiation 3
BA-125	Project Management: Risk Management 3

Minimum credits required for certificate 18

Project Management

ASSOCIATE OF APPLIED SCIENCE DEGREE

Upon completion of the two-year AAS program, students are qualified to sit for the national certification examination in project management and to receive the PMP professional designation.

PROGRAM OUTCOMES

Students completing this program will demonstrate the skills necessary for employment in a variety of business and management settings, including utilities, manufacturing, merchandising, retail, sales, construction, consulting, government, and non-profit organizations. More complex program outcome skills include project and business design, budgeting, team management, project management and project evaluation.

CAREERS

Careers may include construction project manager, cost estimator, and educational project manager.

For information contact Bill Waters, ext. 5062 or billw@clackamas.edu

PROJECT MANAGEMENT ASSOCIATE DEGREE: 1ST YEAR

FALL TERM	CREDITS
BA-101	Introduction to Business 4
BA-120	Project Team Tools 3
BA-122	Project Management: Teamwork 3
MTH-065	Algebra II 4
WR-101	Communication Skills: Occupational Writing 3

WINTER TERM

BA-121	Project Management: Workshop 3
BA-123	Project Management: Leadership and Motivation 3
BA-206	Management Fundamentals 4
BA-226	Business Law I 4
BA-223	Principles of Marketing 4

SPRING TERM

BA-124	Project Management: Negotiation 3
BA-125	Project Management: Risk Management 3
BA-131	Introduction to Business Computing [C] 4
BA-217	Budgeting for Managers 3
BA-285	Human Relations in Business 4

PROJECT MANAGEMENT ASSOCIATE DEGREE: 2ND YEAR

FALL TERM	CREDITS
BA-200	Advanced Project Management I 8
— —	Related Instruction elective 3
PE/HE/HPE	PE/Health elective 1

WINTER TERM

BA-201	Advanced Project Management II 8
BA-267	Organizational Development and Behavior
or BA-268	Applied Project Demonstration 6

SPRING TERM

BA-202	Advanced Project Management III 10
BA-268	Applied Project Demonstration
or BA-267	Organizational Development and Behavior 6

Minimum credits required for degree 94

Retail Management

CERTIFICATE

Pending State Approval

This certificate is sponsored by members of the retail industry and is recommended for students currently working retail sales positions or those students who would like to work in retail sales and progress into management roles and responsibilities. Coursework is specific to the retail industry and focuses on preparing retail employees for upward mobility.

PROGRAM OUTCOMES

Upon completing this certificate, students will demonstrate skills necessary to successfully work as retail sales associates and to advance to higher levels of responsibility including supervisory management. Students will develop hard and soft skills in technology and communication to be effective support personnel as well as team leaders and motivators.

CAREERS

Career opportunities include retail clerks, cashiers, manager trainees, sales associates, and other similar positions in all types of retail establishments.

For information contact Dale Hatfield at ext. 2361 or daleh@clackamas.edu or Joan Ryan at ext. 2363 or joanr@clackamas.edu

RETAIL MANAGEMENT CERTIFICATE

COURSE		CREDITS
BA-104	Business Math	3
BA-111	General Accounting I	4
BA-131	Intro to Business Computing	4
BA-205	Solving Communication. Problems w/Tech	4
BA-206	Management Fundamentals	4
BA-223	Principles of Marketing	4
BA-224	Human Resource Management	4
BA-249	Retailing	3
BA-285	Human Relations in Business	4
SP-111	Public Speaking	4

Minimum credits required for certificate 38

Note: Certificate is designed to be completed in less than one year.

Supervisory Training

CERTIFICATE PROFESSIONAL UPGRADE

This program is designed for those students who are interested in supervisory positions, employees desiring advancement to supervisory positions, and supervisors seeking to upgrade supervisory skills.

PROGRAM OUTCOMES

Students completing this program will be prepared for employment in a supervisory role or to move upward with their current employer in career advancement.

CAREERS

Career opportunities may include supervisor or manager of retail sales workforce, supervisor or manager of personal services workers, supervisor or manager of non-retail sales workers.

For information contact Dale Hatfield, daleh@clackamas.edu, or ext. 2361.

SUPERVISORY TRAINING CERTIFICATE

COURSE		CREDITS
BA-205	Solving Comm. Problems w/Technology [C]	4
BA-206	Management Fundamentals	4
BA-217	Budgeting for Managers	3
BA-224	Human Resource Management	4
BA-285	Human Relations in Business	4
WR-121	English Composition	3

Minimum credits required for certificate 22

Water & Environmental Technology

CERTIFICATE ASSOCIATE OF APPLIED SCIENCE DEGREE PROFESSIONAL UPGRADE

The Water & Environmental Technology program provides professional/technical classes combined with hands-on experience. Classes are offered in day/evening combinations and have enrollment limits to enhance instructional quality and job placement.

Coursework emphasizes fundamental aspects of drinking water distribution, drinking water treatment, wastewater collection, and wastewater treatment.

Coursework includes 240 hours of industry cooperative work experience, laboratory methods in environmental chemistry and aquatic microbiology and preparation for the provisional operator certification exams.

Program math prerequisite, MTH-065 Algebra II, must be completed prior to fall term entry.

PROGRAM OUTCOMES

Program outcomes include the skills necessary for entry-level employment in a variety of water-management industries, for cities, counties and state agencies, and businesses, including wastewater treatment plants, drinking water treatment plants environmental laboratories, source control, engineering firms, surface water management agencies, and environmental agencies and organizations.

CAREERS

Career opportunities may include water and/or liquid waste treatment plant and system operator, environmental science technician, and environmental engineering technician. Careers may also include environmental lab technician, source control technician, surface water specialist and environmental regulator.

For information contact John Lewis, ext. 2206 or jlewis@clackamas.edu

WATER & ENVIRONMENTAL TECHNOLOGY CERTIFICATE

FALL TERM		CREDITS
CH-104	Introductory Chemistry	
or CH-221	General Chemistry	5
MTH-082*	Math for Water Technology	2
WQT-110	Wastewater Operations I	3
WQT-111	Waterworks Operations I	3
WR-101	Communication Skills: Occupational Writing	3
or WR-121	English Composition	
— —	Human Relations elective (recommended: PSY-101)	3
WINTER TERM		
BI-204	Elementary Microbiology	4
MTH-082*	Math for Water Technology	2
WQT-120	Wastewater Operations II	3
WQT-121	Waterworks Operations II	3
WQT-122	Water Distribution & Wastewater Collect. Systems	3
WQT-123	Environmental Chemistry I	3
SPRING TERM		
CS-120	Survey of Computing [C]	4
WQT-130	Wastewater Plant Operations III	4
WQT-131	Water Treatment	4
WQT-132	Collection & Distribution Lab	1
WQT-134	Environmental Chemistry II	2
WQT-180	Water & Environmental Projects I	5
<i>Minimum credits required for certificate</i>		57

*4 credits of MTH-082 are required for the certificate and may not be substituted or waived.

WATER & ENVIRONMENTAL TECHNOLOGY ASSOCIATE DEGREE: 1ST YEAR

Complete certificate program.

WATER & ENVIRONMENTAL TECHNOLOGY ASSOCIATE DEGREE: 2ND YEAR

FALL TERM		CREDITS
WQT-241	Aquatic Microbiology	4
WQT-242	Hydraulics of Water & Wastewater	3
WQT-245	Instrumentation & Control	4
WQT-280	Water & Environmental Projects II	5
WINTER TERM		
MTH-095	Intermediate Algebra	
or MTH-111	College Algebra	4-5
— —	Geography elective (recommended: GEO-130)	4
— —	Speech elective	3
— —	Related Instruction elective	3-4
SPRING TERM		
CS-121	Computer Applications [C]	3
HE-252	First Aid/CPR	3
— —	Related Instruction elective	3-4
<i>Minimum credits required for degree (requirements + electives)</i>		96-99

RECOMMENDED ELECTIVES

BA-101	Introduction to Business
PS-203	U.S. Government: State & Local Institutions
PSY-240	Interpersonal Awareness & Growth
SOC-206	Institutions & Social Change
SP-111	Public Speaking

PROFESSIONAL UPGRADE COURSES

The following courses are designed to upgrade professional skills and in some cases assist in preparation for state certification examinations.

WQT-009	Cross Connect. Backflow Assembly Tester (4.0 CEU)	
WQT-009	Cross Connection Specialist Course (3.2 CEU)	
WQT-009	Water & Wastewater Short Schools (2.0 & 2.3 CEU)	
WQT-009	Equipment Maintenance & Repair (CEU)	
WQT-009	Pretreatment (CEU)	
WQT-009	Certification Review/Wastewater Operators (CEU)	
WQT-009	Certification Review/Waterworks Operators (CEU)	
WQT-010	Wastewater Operations I	3 credits
WQT-011	Waterworks Operations I	3 credits
WQT-020	Wastewater Operations II	3 credits
WQT-021	Waterworks Operations II	3 credits
WQT-030	Wastewater Operation III	3 credits
WQT-031	Water Treatment	3 credits

Water/High-Purity Production

**CERTIFICATE
PROFESSIONAL UPGRADE**

The High Purity Water Production Certificate program provides classes and hands-on experience with advanced water treatment methods used in the high-tech industry. The Certificate program has been developed in cooperation with Intel Corporation.

Program math prerequisite, MTH-065 Algebra II, must be completed prior to fall term entry.

PROGRAM OUTCOMES

Program outcomes for the High Purity Water Production Certificate include skills for entry-level employment in the water production technology field of the high-tech industry.

CAREERS

Career opportunities may include high-purity lab technician and high-purity production technician.

For information contact John Lewis, ext. 2206 or jlewis@clackamas.edu

HIGH PURITY WATER CERTIFICATE

FALL TERM		CREDITS
WQT-245	Instrumentation & Control	4
WINTER TERM		
WQT-125	High Purity Water Production I	3
MTH-082	Math for Water Technology	1
SPRING TERM		
WQT-135	High Purity Water Production II	4
WQT-180	Water & Environmental Projects I	5
<i>Minimum credits required for certificate</i>		17

Welding Technology

CERTIFICATE ASSOCIATE OF APPLIED SCIENCE DEGREE PROFESSIONAL UPGRADE

This program prepares students for entry into these industries: fabricated structural metal products, motor vehicles and equipment, construction and heavy construction, transportation equipment, ship and boat building and repair, aircraft and parts, self-employment, and miscellaneous fabricated metal products.

CCC's welding instructors are AWS Certified (American Welding Society) professionals and utilize AWS curriculum, the international standard.

Coursework focuses on the knowledge and skills to perform:

- Fillet welds and groove welds using:
 - Shielded metal arc welding (SMAW)
 - Gas metal arc (GMAW)
 - Flux cored arc welding (FCAW)
 - Gas tungsten arc (GTAW)
 - Steel, stainless steel and aluminum
 - A variety of different electrodes
- Plasma arc cutting (PAC), air carbon arc cutting (CAC-A) and gouging, manual and automatic oxy-fuel cutting (OFC and OFC-Track Burner) processes
- Knowledge of materials science and welding theory
- Print reading, inspection, quality, safety and shop practices
- Fabrication techniques, including job cost calculations, layout, sketching, bills of material, fitting and cutting welding applied to real projects designed by industry partners

PROGRAM OUTCOMES

Program outcomes include the skills necessary for entry-level employment in large, medium and small employers in the industries listed above as trained welders, flame and plasma cutters, fabricators, fitters, and welding machine operators. Welders can advance to more skilled jobs with additional training and experience, such as technicians, supervisors, inspectors or instructors.

CAREERS

Career opportunities may include welding, fabrication, construction, production welding, CNC cutting machine operation and sheet metal.

SHORT-TERM TRAINING

For students who need a quick-entry strategy into the workforce, an individualized education and employment plan can be created that concentrates the knowledge and skills necessary to start or change a career path. Please see a faculty advisor for more information. A short term training certificate is available.

For information contact Mike Mattson, ext. 2483 or mattsonm@clackamas.edu; Sue Caldera, ext. 2013 or suec@clackamas.edu; or the Manufacturing Department, ext. 2062.

WELDING TECHNOLOGY CERTIFICATE: 1ST YEAR

FIRST TERM		CREDITS
MFG-107	Industrial Safety and OSHA	3
MTH-050*	Technical Mathematics I	3
WLD-111	Shielded Metal Arc Welding (SMAW)	8
WLD-261	Welding Special Projects	2
SECOND TERM		
MFG-109	Computer Literacy for Technicians [C]	3
WLD-100	Welder's Print Reading I	3
WLD-113	Gas Metal Arc Welding & Flux Core Arc Welding (GMAW/FCAW)	8
WLD-261	Welding Special Projects	2
WR-101*	Communication Skills: Occupational Writing	3
THIRD TERM		
MFG-221	Materials Science	3
WLD-115	Gas Tungsten Arc Welding (GTAW)	8
WLD-200	Welder's Print Reading II	3
WLD-280	Welding Technology/CWE	2
— —*	Human Relations elective	3
<i>Minimum credits required for certificate</i>		54

WELDING TECHNOLOGY ASSOCIATE DEGREE: 1ST YEAR

Complete certificate program.

WELDING TECHNOLOGY ASSOCIATE DEGREE: 2ND YEAR

FOURTH TERM		CREDITS
MFG-111	Machine Tool Fundamentals I	3
WLD-211	Advanced SMAW Welding	4
WLD-250	Welding Fabrication I Beginning Project	4
— —*	Related Instruction elective	3
FIFTH TERM		
WLD-213	Advanced GMAW/FCAW Welding	4
WLD-251	Welding Fabrication II Intermediate Project	4
— —*	Related Instruction elective	3
PE/HE/HPE*	PE/Health elective	3
SIXTH TERM		
WLD-215	Advanced GTAW Welding	4
WLD-252	Welding Fabrication III Advanced Project	4
WLD-261	Welding Special Projects	2
WLD-280	Welding Technology/CWE	2
<i>Minimum credits required for degree (requirements & electives)</i>		94

*Substitute college transfer courses for these courses if you plan to continue your education at a higher education institution. It is recommended that you consult with a faculty advisor or a staff member in the Advising & Counseling Center for the transfer requirements of the specific advanced program or school.

Smart.

Transfer Information

Transferring? Take Your First Two Years at Clackamas

Any of the options described below can work well if you want to begin your bachelor's degree at Clackamas Community College. Students using any of these options must still complete lower division coursework required for their major and meet the transfer admission requirements for the four-year university where they plan to transfer.

Associate of Arts Oregon Transfer Degree (AAOT)

This degree is designed for students who want the flexibility to attend an Oregon University System (OUS) school, but may or may not have a chosen major. All OUS schools and many of Oregon's private universities and colleges accept the AAOT to meet their lower division (100 and 200 level) general education requirements.

Associate of Science Oregon Transfer Degree - Business (ASOT)

This degree is designed for students who wish to transfer to an OUS school and complete a bachelor's degree in business. Students must complete OUS school specific courses in business while completing the ASOT. Students should work closely with academic advisors at both CCC and the OUS school of their choice to insure they meet any additional requirements and procedures for admission to both the OUS school and the chosen business degree program.

Associate of General Studies (AGS)

This flexible degree uses a broader variety of coursework to meet degree requirements than do any of the other associate-level degrees designed for transfer. Not all courses that may apply to completion of the AGS are transferable to four year institutions. It is important to work closely with an academic advisor to individualize and choose courses to maximize transferability.

Transfer Course Work

This option is for students who have selected a transfer school and want to meet some of the course requirements for that school with CCC courses. Students need to know the degree requirements at their intended transfer school and work with a CCC advisor in order to choose courses.

Undecided about your educational goals?

Follow these guidelines for a good start in any program of study. Determine how many credits you want to take during each term, then use the information on pages 14-22 to choose specific courses that fulfill the categories listed below. Base your course selection on your placement test scores from the Testing/Assessment Center and by consulting with a faculty advisor or an academic advisor in the Advising & Counseling Center.

Course	Credits
Writing	8-9
Oral Communication	4
Math	4
Arts and Letters courses	10
Social Science courses	10
Science/Math/Computer Science courses	10
Electives	
College Success course (HD-120)	1
HPE-295 or 3 terms of PE-185 (different activities)	3
Other elective courses	vary

Transfer Steps

See a faculty advisor or an academic advisor in the Advising & Counseling Center for support in following these steps:

- Contact the four-year university you plan to attend to check entrance requirements and the suggested freshman and sophomore classes required in your chosen field.
- Confer with a faculty advisor or an academic advisor for an initial written Educational Plan and before you register for classes each term.
- Check with the college or university a term or two before completing your work at CCC to make sure you are meeting all their requirements.
- Apply for admission to the college or university by their transfer student deadline.
- Have your credits transferred to the four-year institution after you complete your studies at CCC.

Transfer Planning Chart

The following pages contain a comprehensive chart that lists CCC transfer options for the Oregon University System (OUS) bachelor degrees. Degrees offered in the OUS system are listed by Subject Areas, which will help you see related degree possibilities. The chart also shows Oregon Department of Education Career Learning Areas. These indicate the career pathways the degrees are designed to support. CCC advisor information and links to department homepages are located on the chart.

For transfer information regarding bachelor's degrees offered at private and out of state colleges that are not part of the Oregon University System, please contact the schools directly. For more information about bachelor's degrees offered at Oregon University System schools, start with the OUS Academic Program Database website at <http://www.ous.edu/aca/acadprog.html>. See an academic advisor for contact information and additional support.

Degree planning sheets for the AAOT, ASOT in Business, and the AGS can be found on pages 15-19 of this catalog. Please contact your faculty advisor or an academic advisor in the Advising & Counseling Center for course recommendations to support your transfer planning.

CCC Transfer Options

OUS ¹ Subject Areas	OUS ¹ Bachelor Degrees ²	CCC Transfer Options Degrees (D) or Classes (C) ³	CCC Faculty Advisor/ Advisor ⁴	Link to Department Homepage	ODE ⁵ Career Learning Areas
Architecture	Interior Architecture/Design	D, C	Mike Jones, x2443 mikej@clackamas.edu or Advising & Counseling, x2213	Drafting Department http://depts.clackamas.edu/drafting/	Industrial & Engineering Systems
	Landscape Architecture	D, C	Elizabeth Howley, x2389 ehowley@clackamas.edu or Advising & Counseling, x2213	Horticulture Department http://depts.clackamas.edu/hort/	
	Interior Design	D, C	Advising & Counseling, x2213	Advising & Counseling Department http://depts.clackamas.edu/advising/	
Art	Art History & Criticism	D, C	Nora Brodnicki, x2347 norab@clackamas.edu or Advising & Counseling, x2213	Art Department http://depts.clackamas.edu/art/	Arts & Communication
	Fine Arts & Arts Studies	D, C			
	Painting	D, C			
	Media Arts	D, C			
	Printmaking	D, C			
	Sculpture	D, C			
	Metalsmithing & Jewelry	D, C			
	Photography	D, C			
	Applied Visual Arts	D, C			
	Fibers	D, C			
	Dance	D, C	Jim Jackson, x2295 jimj@clackamas.edu or Advising & Counseling, x2213	Athletics Department http://depts.clackamas.edu/athletics/	
Performing Arts	D, C	David Smith-English, x2725 davidse@clackamas.edu or Advising & Counseling, x2213	Communication & Theatre Arts Dept. http://depts.clackamas.edu/theatre/		
Theater	D, C				
Arts & Letters	Language & Culture	D, C	Emily Orlando, x2372 emilyo@clackamas.edu or Advising & Counseling, x2213	English Department http://depts.clackamas.edu/english/	Arts & Communication
	Liberal Studies	D, C			
	English	D, C			
	Linguistics	D, C			
	American Studies	D, C			
Comparative Literature/ Language	D, C				

1 Oregon University System: www.ous.edu

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CCC Transfer Options

OUS ¹ Subject Areas	OUS ¹ Bachelor Degrees ²	CCC Transfer Options Degrees (D) or Classes (C) ³	CCC Faculty Advisor/ Advisor ⁴	Link to Department Homepage	ODE ⁵ Career Learning Areas
Arts & Letters	Religious Studies & Theology	D, C	Bill Briare, x2457 billb@clackamas.edu or Don Hartsock, x2542 donnh@clackamas.edu or Advising & Counseling, x2213	Social Sciences Department http://depts.clackamas.edu/socsci/	Arts & Communication
	Humanities	D, C			
	Classical Civilization	D, C			
	Classics	D, C			
	Philosophy	D, C	Kelly Brennan, x2726 kellyb@clackamas.edu or Advising & Counseling, x2213	Communication & Theatre Arts Dept. http://depts.clackamas.edu/theatre/	
Speech & Communications	D, C				
Business, General	Accounting	D, C	John Olds, x2408 johno@clackamas.edu or Joan Ryan, x2362 joanr@clackamas.edu or Advising & Counseling, x2213	Business Department http://depts.clackamas.edu/business/	Business & Management
	Business Administration	D, C			
	Business/Economics	D, C			
	Management	D, C			
	Finance	D, C			
	Merchandising Management	D, C	Lynne Maloney, x2527 lynnem@clackamas.edu or Advising & Counseling, x2213	Education & Human Services Department http://depts.clackamas.edu/fhs	Health Services
Health Care Administraton	D, C				
Communication	Communication	D, C	Kelly Brennan, x2726 kellyb@clackamas.edu or Advising & Counseling, x2213	Communication & Theatre Arts Dept. http://depts.clackamas.edu/theatre/	Arts & Communication
Computer Science	Operations Management	C	Linda Anderson, x2539 lindaa@clackamas.edu or Advising & Counseling, x2213	Computer Science Department http://cs.clackamas.edu/cs/index.htm	Arts & Communication
	Computer Science/ Multimedia	C			
	Information Systems	C			
	Information Technology	C			
	Management Information Systems	C			
Criminal Justice	Administration of Justice	D, C	Dick Ashbaugh, x2237 dicka@clackamas.edu or Advising & Counseling, x2213	Criminal Justice Department http://depts.clackamas.edu/crimjust/	Human Resources
	Corrections	D, C			
	Community Crime Prevention	D, C			
Design	Apparel Design	D, C	Nora Brodnicki, x2347 norab@clackamas.edu or Advising & Counseling, x2213	Art Department http://depts.clackamas.edu/art/	Arts & Communication
	Multimedia Design	D, C			
	Visual Design	D, C			
Education	Education	D, C	Paula Hamm, x2804 paulah@clackamas.edu or Advising & Counseling, x2213	Education & Human Services Department http://depts.clackamas.edu/fhs/	Human Services
Engineering	Civil Engineering	C	John Lewis, x2206 jlewis@clackamas.edu or Advising & Counseling, x2213		Industrial & Engineering Systems
	Electrical & Electronics	C			
	Engineering				
	Electrical Engineering	C			
	Industrial Engineering	C			
	Environmental Engineering	C			
	Forest Engineering	C			
	Mechanical Engineering	C			
	Metallurgical Engineering	C			
	Nuclear Engineering	C			
	Mining Engineering	C			
Geological Engineering	C				

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Engineering	Software Engineering Technology	C	John Lewis, x2206 jlewis@clackamas.edu or Advising & Counseling, x2213		Industrial & Engineering Systems
	Bioengineering	C			
	Construction Engineering Management	C			
	Computer Engineering	C	Linda Anderson, x2539 lindaa@clackamas.edu or Advising & Counseling, x2213	Computer Science Department http://cs.clackamas.edu/cs/index.htm	
	Electronics Engineering Technology	C	Mike Mattson, x2483 mattsonm@clackamas.edu or Advising & Counseling, x2213	Manufacturing Technology Department http://depts.clackamas.edu/mfg/	
	Manufacturing Engineering Technology	C			
	Mechanical Engineering Technology	C			
Geomatics	D, C	Mike Jones, x2443 mikej@clackamas.edu or Advising & Counseling, x2213	Drafting Department http://depts.clackamas.edu/drafting/		
Environmental Studies	Environmental Health & Safety	D, C	Bob Mисley, x2376 bobm@clackamas.edu or Advising & Counseling, x2213	Science Department (Life Sciences) http://depts.clackamas.edu/science-bi/	Natural Resource Systems
	Environmental Economics, Policy & Management	D, C			
Ethnic Studies	Black Studies	D, C	Advising & Counseling, x2213	Advising & Counseling Department http://depts.clackamas.edu/advising/	Arts & Communication
	Judaic Studies	D, C			
	Russian & East European Studies	D, C			
	Asian Studies	D, C			
Family & Human Services	Early Childhood Development	D, C	Patricia McIlveen, x2240 patriciam@clackamas.edu or Advising & Counseling, x2213	Education & Human Services Department http://depts.clackamas.edu/fhs/	Human Resources
	Human Development & Family Sciences	D, C			
	Child & Family Studies	D, C			
Foreign Languages	French	D, C	Irma Bjerre, x2381 irmab@clackamas.edu or Advising & Counseling, x2213	Foreign Language Department http://depts.clackamas.edu/forlang/	Arts & Communication
	German	D, C			
	Greek	D, C			
	Latin	D, C			
	Italian	D, C			
	Japanese	D, C			
	Romance Languages	D, C			
	Spanish	D, C			
	American Sign Language/ English Interpreting	D, C			
Chinese	D, C				
Health & Physical Education	Exercise & Sport Science	D, C	Jim Jackson, x2295 jimj@clackamas.edu or Advising & Counseling, x2213	Athletics Department http://depts.clackamas.edu/athletics/	Human Services
	Health Promotion & Education	D, C			Business & Management
	Outdoor Recreation Leadership & Tourism	D, C			
	Food Science & Technology	D, C	Lynne Maloney, x2527 lynnem@clackamas.edu Advising & Counseling, x2213	Education & Human Services Department http://depts.clackamas.edu/fhs/	Natural Resource Systems
	Nutrition & Food Mgmt.	D, C			Health Services

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Journalism	Communication Studies	D, C	Linda Vogt, x2310 lindav@clackamas.edu or Advising & Counseling, x2213	English Department http://depts.clackamas.edu/english/	Arts & Communication
	Electronic Media	D, C			
	Magazine	D, C			
	News-Editorial	D, C	Dale Hatfield, x2361 daleh@clackamas.edu or Advising & Counseling, x2213	Business Department http://depts.clackamas.edu/business/	Business & Management
	Advertising	D, C			
Public Relations	D, C				
Mathematics	Mathematics	D, C	Stefan Baratto, x2943 sbaratto@clackamas.edu or Advising & Counseling, x2213	Mathematics Department http://cs.clackamas.edu/math/	Industrial & Engineering Systems
Medical	Radiologic Science	D, C	Advising & Counseling, x2213	Advising & Counseling Department http://depts.clackamas.edu/advising/	Health Services
	Nursing	D, C			
	Clinical Laboratory Science (Medical Technology)	D, C			
	Human Physiology	D, C			
	Dental Hygiene	D, C			
	Echocardiography	D, C			
	Emergency Medical Services	D, C			
	Pre-Dental	D, C			
	Pre-Medical	D, C			
	Ultrasound	D, C			
	Respiratory Care	D, C			
	Pre-Physical Therapy	D, C			
	Pre-Optometry	D, C			
	Pre-Pharmacy	D, C			
Animal Sciences	D, C	Bob Mисley, x2376 bobm@clackamas.edu or Advising & Counseling, x2213	Science Department (Life Sciences) http://depts.clackamas.edu/science-bi/	Natural Resource Systems	
Music	Contemporary Music	D, C	Tom Wakeling, x2160 wakelingt@clackamas.edu or Advising & Counseling, x2213	Music Department http://depts.clackamas.edu/music/	Arts & Communication
	Music Education	D, C			
	Music Theory	D, C			
	Music: Jazz Studies	D, C			
	Music: Performance	D, C			
Natural Resources	Agricultural, General	D, C	Elizabeth Howley, x2389 ehowley@clackamas.edu or Advising & Counseling, x2213	Horticulture Department http://depts.clackamas.edu/hort/	Natural Resource Systems
	Agricultural & Resource Economics	D, C			
	Agricultural Business Management	D, C			
	Horticulture	D, C			
	Rangeland Resources	D, C			
	Crop & Soil Science	D, C			
	Forest Management	D, C			
	Fisheries & Wildlife Science	D, C D, C D, C	Bob Mисley, x2376 bobm@clackamas.edu or Advising & Counseling, x2213	Science Department (Life Sciences) http://depts.clackamas.edu/science-bi/	
	Fire Services Administration	D, C	Tom Laugle, x2319 toml@clackamas.edu or Advising & Counseling, x2213	Wildland Firefighting http://depts.clackamas.edu/esh/wildland/	

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Natural Resources	Forest Recreation Resources	D, C	Advising & Counseling, x2213	Advising & Counseling Department http://depts.clackamas.edu/advising/	Natural Resource Systems
Planning, Public Policy & Management	Public Policy & Administration	D, C	Advising & Counseling, x2213	Advising & Counseling Department http://depts.clackamas.edu/advising/	Human Resources
	Housing Studies	D, C			
	Community Development	D, C			
Science	Astronomy	D, C	Bob Miskey, x2376 bobm@clackamas.edu or Advising & Counseling, x2213	Science Department (Life Sciences) http://depts.clackamas.edu/science-bi/	Health Service or Natural Resource Systems
	Biology	D, C			
	Botany	D, C			
	Microbiology	D, C			
	Entomology	D, C			
	Marine Biology	D, C			
	Environmental Science	D, C			
	Earth Science	D, C			
	Zoology	D, C			
	Biochemistry	D, C		Science Department (Physical Sciences) http://depts.clackamas.edu/science/physci/	Industrial & Engineering Systems
	Biophysics	D, C			
	Chemistry	D, C			
	Physics	D, C			
Geology	D, C				
Social Science	Psychology	D, C	Bill Briare, x2457 billb@clackamas.edu or Don Hartsock, x2542 donna@clackamas.edu or Advising & Counseling, x2213	Social Sciences Department http://depts.clackamas.edu/socsci/	Human Resources
	Political Science	D, C			
	Sociology	D, C			
	Geography	D, C			
	History	D, C			
	Anthropology	D, C			
	Women's Studies	D, C			
	Economics	D, C		Social Sciences Department http://depts.clackamas.edu/socsci/ or Foreign Language Department http://depts.clackamas.edu/forlang/	Arts & Communication
	International Studies	D, C D, C			
	Urban Studies & Planning	D, C			

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Course Descriptions

Course Descriptions

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* Courses with this prefix may not transfer with credit to a four-year institution.

** Courses with this prefix will not transfer with credit to a four-year institution.

AB

Courses with this prefix may not transfer with credit to a four-year institution unless applied as part of the 12 allowable professional technical credits for the AAOT or ASOT-Business.

Collision Repair

AB-101 Auto Restoration

3 credits

Fall/Winter/Spring/Summer

1 class, 11 lab hours/week

Designed for students interested in auto body repair and painting their own vehicles. Includes dent removal, panel replacement, welding and painting.

AB-111 Collision Repair/Chassis & Brakes

5 credits, Winter

2 class, 7.5 lab hours/week

Collision damage repair. Covers diagnosis, repair and replacement of brake, suspension and steering components.

AB-112 Collision Repair Welding I

1-2 credits, Fall/Winter/Spring

1 class, 4 lab hours/week

Focuses on auto collision damage repair. Emphasis is on MIG, GMAW (Gas Metal Arc Welding) welding on light gauge metals, oxygen-acetylene welding cutting and forming.

AB-113 Collision Repair I/Nonstructural

1-12 credits, Fall/Winter/Spring

5 class, 17 lab hours/week

Metal finishing with instruction in dent repair and plastic body filler. Includes shop safety, service of doors, door components, glass, bumpers, hoods, deck lids, and wind/water leaks. Contains an introduction to fiberglass repair.

AB-123 Collision Repair Welding II

2 credits, Fall/Winter/Spring

1 class, 4 lab hours/week

Training in light gauge metal repair: GMAW (Gas Metal Arc Welding), PAC (Plasma Arc Cutting), S-TRSW (Squeeze-Type Resistance Spot Welding), and other advanced welding techniques specific to collision damage repair. Prerequisite: AB-112.

AB-133 Collision Repair II/Structural

1-12 credits

Fall/Winter/Spring/Summer

5 class, 17 hours/week

Major body damage repairs using modern and conventional frame repair equipment. Replacement of fixed glass, welded body panels and parts. Includes introduction to uni-body repair and estimating. Prerequisite: AB-123.

AB-149 Collision Repair Estimating I

2 credits, not offered every term

3 class hours/week

This course provides instruction in procedure and terminology used in the collision repair estimating field. Body part component identification and the effects of a collision on a vehicle will be studied.

AB-150 Collision Repair Estimating II

2 credits, not offered every term

1 class, 3 lab hours/week

Provides detailed instruction in the use of modern computerized estimating systems in the collision repair field. Prerequisite: AB-149.

AB-211 Collision Repair/Electrical I

4 credits, Spring

2 class, 6 lab hours/week

Develops entry level skills in testing, diagnosing and repairing chassis-wiring systems relating to automotive collision damage.

AB-222 Collision Repair III/Advanced Structural

1-12 credits

Fall/Winter/Spring/Summer

5 class, 17 lab hours/week

Major auto body repair: Dents, bolt-on parts replacement, computerized estimating, replacement of welded body panels & parts, unibody and conventional frame repair, and flexible bumper repair. Prerequisites: AB-133 & AB-211

AB-224 Advanced Collision Repair IV

1-12 credits

Fall/Winter/Spring/Summer

5 class, 17 lab hours/week

Advanced frame repair and advanced unibody repair. Advanced electronic frame measuring and aluminum welding. Includes introduction to refinishing. Required: Instructor consent. Prerequisite: AB-222.

AB-231 Collision Repair/Electrical II

3 credits, Spring

1 class, 5 lab hours/week

Advanced electrical diagnosis and repair, including passive and non-passive restraint systems, i.e., seat belt restraints, air bags and impact sensor units. Prerequisite: AB-211.

AB-235 Collision Repair Welding III

2 credits, Winter/Spring

1 class, 4 lab hours/week

Course focuses on aluminum welding for collision damage repair. The GMAW (Gas Metal Arc Welding) and GTAW (Gas Tungsten Arc Welding) processes are covered along with related weld repair techniques and equipment/safety procedures. Prerequisite: AB-123.

AB-280 Collision Repair/CWE

2-6 credits, Fall/Winter/Spring

1.5 class, 6-18 job site hours/week

Cooperative work experience. On-the-job experience in an auto body repair shop. Required: Instructor consent & a CWE seminar.

ABR

Courses with this prefix may not transfer with credit to a four-year institution unless applied as part of the 12 allowable professional technical credits for the AAOT or ASOT-Business.

Collision Repair/Refinishing

ABR-125 Collision Repair Refinishing I

1-12 credits, Fall/Winter/Spring

5 class, 17 lab hours/week

Includes shop safety, fire prevention, selection and use of paint products, abrasives, fillers, basic application of top coats, primers and sealers.

ABR-127 Collision Repair/Refinishing II

1-12 credits

Fall/Winter/Spring/Summer

5 class, 17 lab hours/week

Application of urethane top coats includes complete refinishing, spot painting, color matching, and problem solving. Introduction to computer color information retrieval and mixing. Prerequisite: ABR-125.

ABR-129 Collision Repair/Refinishing III
1-12 credits
Fall/Winter/Spring/Summer
5 class, 17 lab hours/week

Application of urethane enamel, urethane base coat/clear coat, and tri-coat/pearl finishes. Includes complete refinishing, spot and panel painting, color matching and problem solving. Prerequisite: ABR-127.

ABR-142 Airbrush Art
2 credits, Fall/Winter
2 class, 2 lab hours/week

Includes original or repair of automotive art, murals, lettering, logos, etc. Techniques may be applied to signage and manicurist projects. Topics include airbrush selection & maintenance, layouts and masking, decals, colors and blending.

ABR-152 Custom Painting Fundamentals
2 credits, Spring
2 class, 2 lab hours/week

Custom color application and special effects. Covers personal protection, shop safety, environmental concerns, product choice and compatibility, selection and use of masking materials, and color harmony.

ABR-162 Basic Automotive Pinstriping
2 credits, Winter
2 class, 2 lab hours/week

Matching factory striping colors and patterns. Designing and applying custom designs. Integrating striping into graphic designs. Covers necessary materials and tools.

ABR-180 Auto Body Refinishing/CWE
2-6 credits
Fall/Winter/Spring/Summer
1.5 class, 6-18 job site hours/week

Cooperative work experience. On-the-job experience in an auto refinishing shop. Required: Instructor consent & a CWE seminar.

ABR-225 Production Shop Techniques
1-10 credits
Fall/Winter/Spring/Summer
5 class, 15 lab hours/week

Designed for students who wish to gain additional hands-on experience in refinishing, using the most up-to-date methods and materials. Required: Instructor consent. Prerequisites: ABR-125, ABR-127, ABR-129.

ABR-227 Restoration Practices
1-10 credits
Fall/Winter/Spring/Summer
5 class, 15 lab hours/week

Designed for students who wish to broaden their skills base in the upper end refinish market. Projects will be more challenging, with standards and expectations set higher.

AM

Courses with this prefix may not transfer with credit to a four-year institution unless applied as part of the 12 allowable professional technical credits for the AAOT or ASOT-Business.

Automotive Service Technology

AM-106 Fix Your Own Car
2 credits, not offered every term
1 class, 3 lab hours/week

A do-it-yourself course for non-automotive majors who want to work on their own cars. Includes: oil change, lubrication, fluid checks, brakes, cooling system, electrical system, safety, and other quick services.

AM-108 Electrical Systems I
3 credits, not offered every term
2 class, 4 lab hours/week

Evening course in automotive electrical systems. Covers basic electricity, electrical repair procedures, battery, cranking system, and charging system servicing.

AM-109 Electrical Systems II
3 credits, not offered every term
2 class, 4 lab hours/week

Continuation of AM-108, Auto Electrical Systems I. Covers ignition system service and an introduction to electronic controls.

AM-120 New Student College Success
1 credit, not offered every term
1 class hour/week for 10 weeks

Workshop style course designed to introduce students to each other and the skills they will need to achieve college success. Recommended for all new students in the automotive field. No tuition charge for class.

AM-121 General Auto Repair I
3 credits, Fall/Winter/Spring
1 class, 6 lab hours/week

For current or previously enrolled auto students. Course material is coordinated with other auto courses. Includes live repair work and fundamentals such as safety, tools, measuring, and fasteners. For first term automotive students.

AM-122 General Auto Repair II
3 credits, Fall/Winter/Spring
1 class, 6 lab hours/week

For current or previously enrolled auto students. Course material is coordinated with other auto courses. Includes live repair work and fundamentals such as safety, tools, measuring, and fasteners. For second term automotive students.

AM-123 General Auto Repair III
3 credits, Fall/Winter/Spring
1 class, 6 lab hours/week

For current or previously enrolled auto students. Course material is coordinated with other auto courses. Includes live repair work and fundamentals such as safety, tools, measuring, and fasteners. For third term automotive students.

AM-129 Electrical Systems
7 credits, Winter
3 class, 11 lab hours/week

Includes basic electricity, introduction to semiconductors, electrical measurement, schematics, wiring repair, service of batteries, cranking, charging, and ignition systems.

AM-130 Brake Systems
4 credits, Spring/Summer
2 class, 6 lab hours/week

Theory and lab course covers basic hydraulics, brake fluids, friction material, seals, disc and drum brakes, disc and drum brake servicing equipment, hydraulic and vacuum brake boosters and anti-lock braking systems. Corequisite: AM-131.

AM-131 Chassis Systems
4 credits, Spring/Summer
2 class, 6 lab hours/week

Includes design, construction, and service of front and rear suspension systems. Also covers wheels and tires, steering, and wheel alignment. Corequisite: AM-130.

AM-133 Engine Systems
7 credits, Fall/Summer
3 class, 11 lab hours/week

A course in engine repair. Includes engine electrical fundamentals, design, construction, testing, maintenance, repair, and rebuilding.

AM-141 ASE Test Preparation
3 credits, not offered every term
3 class hours/week

Prepares automotive technicians for the National Institute for Automotive Service Excellence tests as a Certified Master Automotive Technician.

AM-175 Advanced Mechanic Studies
3 credits, Fall/Winter/Spring
1 class, 6 lab hours/week

Lab course for currently enrolled automotive students wishing to specialize in specific areas of automotive repair. Required: Instructor consent.

AM-185 Advanced Mechanic Studies II
3 credits, Fall/Winter/Spring
1 class, 6 lab hours/week

Lab course for currently enrolled automotive students wishing to specialize in specific areas of automotive repair. Required: Instructor consent.

AM-195 Advanced Mechanic Studies III
3 credits, Fall/Winter/Spring
1 class, 6 lab hours/week

Lab course for currently enrolled automotive students wishing to specialize in specific areas of automotive repair. Required: Instructor consent.

AM-224 Comfort Systems
4 credits, Spring, Winter
2 class, 6 lab hours/week

Covers design, construction, testing, maintenance, and repair of automotive heating and air conditioning systems.

AM-228 Service Shop Management
4 credits, Winter
4 class hours/week

Course designed to familiarize students with the responsibilities of the parts manager, service manager and service writer. Evenings only.

AM-235 Power Transmission Systems
7 credits, Fall
3 class, 11 lab hours/week

Covers construction, operation, service and repair of clutches, manual transmissions, U-joints, drive lines, final drives, overdrive, and four wheel drives.

AM-243 Fuel & Emission Control Systems
7 credits, Winter
3 class, 11 lab hours/week

Covers service of fuel storage and delivery systems: fuel injection, emission controls, and other electronic engine controls. Includes DSO use and exhaust gas analysis. Prerequisite or Corequisite: AM-129.

AM-244 Advanced Electrical & Fuel Systems
7 credits, not offered every term
3 class, 11 lab hours/week

A continuation of AM-129 & AM-243. Includes diesel systems, electrical diagnosis, engine analysis equipment, electronic engine controls, air bags, and electrical accessories. Prerequisites: AM-129 & AM-243, or instructor consent.

AM-245 Automatic Transmission Systems
7 credits, Fall
3 class, 11 lab hours/week

A course in automatic transmission repair. Includes design, construction, testing, service and rebuilding of automatic transmissions and transaxles.

AM-250 High Performance Engines I
3 credits, Summer/Winter
6 class hours/week

First in series designed to develop a solid foundation in the history and operation of internal combustion engines. Includes performance requirements for engines designed to operate in specific environments - street, high performance and racing.

AM-251 High Performance Engines II
3 credits, Fall/Spring
6 class hours/week

Second in the series that will introduce the building and performance requirements for engines designed to operate in specific environments - street, high performance and racing. Prerequisite: AM-250.

AM-258 Advanced Brake & Chassis Systems
4 credits, Winter
2 class, 6 lab hours/week

A continuation of AM-130 & AM-131. Includes in-depth study of alignment, ABS, suspension problems, and special tools and equipment used in brake and suspension service. Prerequisites: AM-130 & AM-131.

AM-280 Auto Mechanics/CWE
2-6 credits

Fall/Winter/Spring/Summer
1.5 class, 6-18 job site hours/week
Cooperative work experience. On-the-job experience in an auto repair shop or auto dealership. Required: Instructor consent & a CWE seminar.

ANT

Anthropology

ANT-101 Physical Anthropology
4 credits, Fall
4 class hours/week

Introduces the study of humans as biological beings in the context of modern genetics, evolutionary theory, primate behavior, and the role of the physical anthropologist in forensic science. Meets the social science requirement for the AAOT degree. Recommended: Placement in RD-115.

ANT-102 Archaeology & Prehistory
4 credits, Winter/Spring
4 class hours/week

Introduces the methods used by archaeologists to study the development of human cultures. Provides a survey of world prehistory, tracing the transition of human societies from hunting and gathering to farming, to the beginning of urban life and the rise of early civilizations. Meets the social science requirement for the AAOT degree. Also offered as a telecourse. Recommended: Placement in RD-115.

ANT-103 Cultural Anthropology
4 credits, Fall/Winter/Spring
4 class hours/week

Introduces the diversity of contemporary human cultures and the ways anthropologists study and compare them in an effort to understand how different societies organize their lives and make sense of the world around them. Explores the interrelationships among the various elements of culture. Meets the social science requirement for the AAOT degree. Also offered as a telecourse. Recommended: Placement in RD-115.

ANT-230 Indians of Oregon
4 credits, not offered every year
4 class hours/week

Survey of Native American cultures of Oregon based on archaeological, ethno-historical, and ethnographic evidence. Begins with arrival of humans in this region more than 12,000 years ago and concludes with contemporary Native American issues. Meets the social science requirement for the AAOT degree. Recommended: Placement in RD-115.

ANT-231 Indians of the Pacific N.W.
4 credits, not offered every year
4 class hours/week

Survey of Native American cultures in the Pacific Northwest region from prehistoric times to the present. Course is based on archaeological, ethno-historical, and ethnographic evidence. Includes contemporary issues in Northwest Native American life. Meets the social science requirement for the AAOT degree. Recommended: Placement in RD-115.

ANT-232 Indians of North America
4 credits, not offered every year
4 class hours/week

A broad survey of the cultures, arts, and history of Native Americans north of Mexico. Uses archaeological, ethno-historical, and ethnographic evidence to explore the diversity of Native American cultures from prehistoric times to the present. Includes contemporary issues in Native American life. Meets the social science requirement for the AAOT degree. Recommended: Placement in RD-115.

ANT-280 Anthropology/CWE
2-6 credits, Fall/Winter/Spring
1.5 class, 6-18 job site hours/week

Cooperative work experience. Provides students with on-the-job work experience in the field of anthropology and/or archaeology. Required: Instructor consent & a CWE seminar.

ART

Art

ART-101 Art Appreciation
3 credits, Fall
4 class hours/week

Discover the fundamentals of thinking about and creating art through class discussions, gallery/museum tours. This course will examine history, culture, ideas and issues associated with American Art from 1600-1945. Meets the arts & letters requirement for the AAOT degree.

ART-102 Art Appreciation
3 credits, Winter
4 class hours/week

Discover the fundamentals of thinking about and creating art through class discussions, gallery/museum tours. This course will examine history, culture, ideas and issues associated with European Art from 1600-1945. Meets the arts & letters requirement for the AAOT degree.

ART-103 Art Appreciation
3 credits, Spring
4 class hours/week

Discover the fundamentals of thinking about and creating art through class discussions, gallery/museum tours. This course will examine history, culture, ideas and issues associated with Contemporary Art from 1945 - the present day. Meets the arts & letters requirement for the AAOT degree.

ART-115 Basic Design: Two Dimensional Design
4 credits, Fall/Winter/Spring
8 class/lab hours/week

Acquaints students with the vocabulary of composition, builds creative and analytical skills, and examines historical and contemporary issues related to visual composition. Meets the arts & letters requirement for the AAOT degree.

ART-116 Basic Design: Color Theory & Composition
4 credits, Winter/Spring
8 class/lab hours/week

Explores color and its relationship to visual composition, and examines historical and contemporary issues of color and composition in the arts. Meets the arts & letters requirement for the AAOT degree.

ART-117 Basic Design: Three Dimensional Composition
4 credits, Fall/Spring
8 class/lab hours/week

Examines the elements of form and space, the principles of structure, and processes involving form. Historical and contemporary issues relating to sculpture, architecture and design are considered. Meets the arts & letters requirement for the AAOT degree.

ART-131 Drawing
4 credits, Fall
8 class/lab hours/week

Introduces drawing tools, materials, techniques, elements of composition; line, gesture, color and value. Assignments involve direct observation and its relationship to volume and form on a two-dimensional plane. Assignments include drawings, readings and critique of projects. Meets the arts & letters requirement for the AAOT degree.

ART-132 Drawing
4 credits, Winter
8 class/lab hours/week

Introduces drawing tools, materials, techniques, elements of composition; line, gesture, color and value. Assignments involve direct observation and its relationship to volume and form on a two-dimensional plane. Assignments include drawings, readings and critique of projects. Meets the arts & letters requirement for the AAOT degree.

ART-133 Drawing
4 credits, Spring
8 class/lab hours/week

Introduces drawing tools, materials, techniques, elements of composition; line, gesture, color and value. Assignments involve direct observation and its relationship to volume and form on a two-dimensional plane. Assignments include drawings, readings and critique of projects. Meets the arts & letters requirement for the AAOT degree.

ART-161 Photography/Beginning
3 credits, Fall/Winter/Spring
6 class/lab hours/week

Introduction to basic camera operation and darkroom processes in developing and printing film. Elements of composition, content, and historical reference will be explored. Course requires access to a 35mm camera with adjustable exposure controls. Meets the arts & letters requirement for the AAOT degree.

ART-162 Photography/Beginning
3 credits, Winter/Spring
6 class/lab hours/week

Continuation of the exploration of camera operation and darkroom processes in developing and printing film. Elements of composition, content, and historical reference will be explored. Course requires access to a 35mm camera with adjustable exposure controls. Meets the arts & letters requirement for the AAOT degree. Recommended: Pass ART-161 or instructor consent.

ART-163 Photography/Beginning
3 credits, Spring
6 class/lab hours/week

Continuation of the exploration of camera operation and darkroom processes in developing and printing film. Elements of composition, content, and historical reference will be explored. Course requires access to a 35mm camera with adjustable exposure controls. Meets the arts & letters requirement for the AAOT degree. Recommended: Pass ART-162 & ART-163 or instructor consent.

ART-204 History of Western Art
3 credits, Fall
3 class hours/week

Art, culture and history from the Paleolithic era through the Byzantine style. A broad overview of art history. Encourages an appreciation and understanding of art and its history through readings, lectures, papers and exams. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

ART-205 History of Western Art
3 credits, Winter
3 class hours/week

Examines art, culture and history from the Medieval Era through the Renaissance. A broad overview of art history. Encourages an appreciation and understanding of art and its history through readings, lectures, papers and exams. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

ART-206 History of Western Art
3 credits, Spring
3 class hours/week

Examines art, culture and history from the Baroque period through the 20th century. A broad overview of art history. Encourages an appreciation and understanding of art and its history through readings, lectures, papers and exams. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

ART-211 Survey of Modern Art
3 credits, Fall
3 class hours/week

Historical survey of "modern" art from its origins in the mid-19th century in Europe to World War I. Emphasis is on the major styles, monuments and artists, and their social and political implications. Meets the arts & letters requirement for the AAOT degree.

ART-212 Survey of Modern Art
3 credits, Winter
3 class hours/week

Historical survey of "modern" art from World War I to early 1960s. Emphasis is on the major monuments and artists, their social and political implications, and on the significance of the shift of major art centers from Europe to the United States in the 20th century. Meets the arts & letters requirement for the AAOT degree.

ART-213 Survey of Modern Art
3 credits, Spring
3 class hours/week

Historical survey of "modern" and "contemporary" art from the early 1960s to present day. Emphasis on major contemporary art in relation to cultural and political issues at the end of the 20th century. Meets the arts & letters requirement for the AAOT degree.

ART-225 Computer Graphics I [C]
3 credits, Fall/Winter/Spring
6 class hours/week

Introduction to the use of digital graphics programs. Photo manipulation, illustration and compositing techniques will be explored. Design principles and creative composition will be emphasized. Historical and contemporary issues related to graphic design aesthetics will be considered. Meets the arts & letters requirement for the AAOT degree. Meets computer literacy requirement. Recommended: Pass ART-115.

ART-226 Computer Graphics II [C]
3 credits, Fall/Winter/Spring
6 class hours/week

Continuation of the processes of digital graphics programs. More advanced aspects of image compositing, bit mapping, layering, and using channels in Photoshop. Creative problem solving, design applications and contemporary issues will be explored. Meets computer literacy requirement. Meets the arts & letters requirement for the AAOT degree. Recommended: Pass ART-225.

ART-227 Computer Graphics III [C]
3 credits, Spring
6 class hours/week

Use of multi-formats to create images, compositions and documents. Design principles, creative problem solving, historical and contemporary issues in graphics and aesthetics will be considered. Meets the arts & letters requirement for the AAOT degree. Meets computer literacy requirement. Recommended: Pass ART-225 & pass ART-226.

ART-250 Ceramics/Beginning
3 credits, Fall
6 class/lab hours/week

Broad general background in ceramics. Explore methods of working with clay: coiling, slab construction and throwing on the wheel. Introduction to glazing and firing. Research contemporary & historical ceramics. Develop fundamental skills to foster artistic growth. Meets the arts & letters requirement for the AAOT degree.

ART-251 Ceramics/Beginning
3 credits, Winter
6 class/lab hours/week

Broad general background in ceramics. Explore methods of working with clay: coiling, slab construction and throwing on the wheel. Introduction to glazing and firing. Research contemporary & historical ceramics. Develop fundamental skills to foster artistic growth. Meets the arts & letters requirement for the AAOT degree.

ART-252 Ceramics/Beginning

3 credits, Spring
6 class/lab hours/week

Broad general background in ceramics. Explore methods of working with clay: coiling, slab construction and throwing on the wheel. Introduction to glazing and firing. Research contemporary & historical ceramics. Develop fundamental skills to foster artistic growth. Meets the arts & letters requirement for the AAOT degree.

ART 253 Ceramics/Intermediate

3 credits, Fall
6 class/lab hours/week

Further develop skills and ideas to foster artistic growth. Explore working with clay: pinching, coiling, and slab construction and throwing on the wheel. Continue to learn about glazing & firing. Research contemporary & historical ceramics. Meets the arts & letters requirement for the AAOT degree.

ART 254 Ceramics/Intermediate

3 credits, Winter
6 class/lab hours/week

Further develop skills and ideas to foster artistic growth. Explore working with clay: pinching, coiling, and slab construction and throwing on the wheel. Continue to learn about glazing & firing. Research contemporary & historical ceramics. Meets the arts & letters requirement for the AAOT degree.

ART 255 Ceramics/Intermediate

3 credits, Spring
6 class/lab hours/week

Further develop skills and ideas to foster artistic growth. Explore working with clay: pinching, coiling, and slab construction and throwing on the wheel. Continue to learn about glazing & firing. Research contemporary & historical ceramics. Meets the arts & letters requirement for the AAOT degree.

ART 257 Jewelry and Metals

3 credits, Fall
6 class/lab hours/week

Basic techniques of silver and non-precious metals, fabrication, forming and surface treatments. Includes sawing, filing, etching, roller printing and chain making. Design and execute jewelry and small sculpture. No experience necessary. Meets the arts & letters requirement for the AAOT degree.

ART 258 Jewelry and Metals

3 credits, Winter
6 class/lab hours/week

Basic techniques of stonemasonry. Includes round, triangular and square bezels for cabochons, tube setting and commercial and irregular prong setting for faceted stones. Design and jewelry that includes different types of stone setting. No experience necessary. Meets the arts & letters requirement for the AAOT degree.

ART 259 Jewelry and Metals

3 credits, Spring
6 class/lab hours/week

Basic techniques of casting in silver and bronze. Includes cuttlefish, centrifugal, sand casting, clay impression, tumbling and patination. Design and execute jewelry, small sculpture and flatware. No experience necessary. Meets the arts & letters requirement for the AAOT degree.

ART-280 Art/CWE

2-6 credits, Fall/Winter/Spring
1.5 class, 6-18 job site hours/week

Cooperative work experience. Provides students with on-the-job work experience in the field of art. Required: Instructor consent & a CWE seminar.

ART 281 Painting/Beginning

4 credits, Fall
8 class/lab hours/week

Introduces basic painting tools, materials, techniques and elements of composition, color, gesture and value. Direct observation of reality in relation to volume and form on a two-dimensional plane. Assignments include paintings, readings and critique of projects. Meets the arts & letters requirement for the AAOT degree.

ART 282 Painting/Beginning

4 credits, Winter
8 class/lab hours/week

Introduces basic painting tools, materials, techniques and elements of composition, color, gesture and value. Direct observation of reality in relation to volume and form on a two-dimensional plane. Assignments include paintings, readings and critique of projects. Meets the arts & letters requirement for the AAOT degree.

ART-283 Painting/Beginning

4 credits, Spring
8 class/lab hours/week

Introduces basic painting tools, materials, techniques and elements of composition, color, gesture and value. Direct observation of reality in relation to volume and form on a two-dimensional plane. Assignments include paintings, readings and critique of projects. Meets the arts & letters requirement for the AAOT degree.

ART-284 Painting/Intermediate

4 credits, Fall
8 class/lab hours/week

Utilizes advanced painting concepts, materials and techniques with emphasis on composition, color, gesture and value. Problems deal with observation of reality in relation to volume and form on a two-dimensional plane. Assignments include paintings, readings and critique of projects. Meets the arts & letters requirement for the AAOT degree.

ART-285 Painting/Intermediate

4 credits, Winter
8 class/lab hours/week

Utilizes advanced painting concepts, materials and techniques with emphasis on composition, color, gesture and value. Problems deal with observation of reality in relation to volume and form on a two-dimensional plane. Assignments include paintings, readings and critique of projects. Meets the arts & letters requirement for the AAOT degree.

ART-286 Painting/Intermediate

4 credits, Spring
8 class/lab hours/week

Utilizes advanced painting concepts, materials and techniques with emphasis on composition, color, gesture and value. Problems deal with observation of reality in relation to volume and form on a two-dimensional plane. Assignments include paintings, readings and critique of projects. Meets the arts & letters requirement for the AAOT degree.

ART-289 Bronze Casting

3 credits, not offered every term
6 class/lab hours/week

Self-directed, advanced level sculpture course for students with a sculpture background. Focus on the lost wax process of metal casting in bronze and aluminum. Students will have opportunities to explore personal expression of form and content. Meets the arts & letters requirement for the AAOT degree.

ART-290 Advanced Painting

4 credits, not offered every term
8 class/lab hours/week

Concentrates on individualized student projects and options. Projects will emphasize traditional elements of composition, color, gesture and value while integrating personal conceptual nature. Project oriented research and critical analysis of completed projects. Meets the arts & letters requirement for the AAOT degree.

ART-291 Sculpture

4 credits, Fall
8 class hours/week

Introduction to the processes and concepts of sculpture; the elements of form and space will be explored. Clay, plaster, mold making, carving, human form, and assemblage will be introduced. Reference to historical and aesthetic content will be presented. Meets the arts & letters requirement for the AAOT degree.

ART-292 Sculpture

4 credits, Winter
8 class hours/week

Explores the human form in traditional and contemporary techniques and concepts. Use of armatures, combining media, and flexible molds will be introduced. Concepts of aesthetics in formal composition will be explored through projects, lectures, and critiques. Historical reference will be examined. Meets the arts & letters requirement for the AAOT degree.

ART-293 Sculpture

4 credits, Spring
8 class hours/week

Introduces metal fabricating, welding, and metal casting. Focus on mixed media and visual communication. Concepts of aesthetics in formal composition will be explored through projects, lectures, and critiques. Historical reference will be examined. Meets the arts & letters requirement for the AAOT degree.

ART-284 Painting/Intermediate

4 credits, Fall
8 class/lab hours/week

Utilizes advanced painting concepts, materials and techniques with emphasis on composition, color, gesture and value. Problems deal with observation of reality in relation to volume and form on a two-dimensional plane. Assignments include paintings, readings and critique of projects. Meets the arts & letters requirement for the AAOT degree.

ART-285 Painting/Intermediate

4 credits, Winter
8 class/lab hours/week

Utilizes advanced painting concepts, materials and techniques with emphasis on composition, color, gesture and value. Problems deal with observation of reality in relation to volume and form on a two-dimensional plane. Assignments include paintings, readings and critique of projects. Meets the arts & letters requirement for the AAOT degree.

ART-286 Painting/Intermediate

4 credits, Spring
8 class/lab hours/week

Utilizes advanced painting concepts, materials and techniques with emphasis on composition, color, gesture and value. Problems deal with observation of reality in relation to volume and form on a two-dimensional plane. Assignments include paintings, readings and critique of projects. Meets the arts & letters requirement for the AAOT degree.

ASC**Arts and Sciences**

See also General Science (GS).

ASC-200 Natural Science Inquiry

4 credits, Fall
3 class, 3 lab hours/week

Introductory lab science course for liberal arts majors. Focuses on scientific discoveries and observations of the Lewis & Clark expedition. Interdisciplinary perspective on science. Collaborative scientific investigations and critical thinking. Topics include scientific methodology, history, and research techniques. Meets the science requirement for the AAOT degree. Recommended: Placement in WR-121.

ASC-201 Integrated Science Concepts

4 credits, Winter
3 class, 3 lab hours/week

Lecture and laboratory activities integrate science concepts recorded in the journals of Lewis & Clark with current science topics in popular culture. Emphasis on critical thinking and collaborative scientific investigation. Topics include biochemistry, genetics, and zoology. Meets the science requirement for the AAOT degree. Prerequisite: Pass ASC-200 or instructor consent.

ASC-202 Integrated Science Concepts

4 credits, Spring
3 class, 3 lab hours/week

Continued integration of science concepts related to the Lewis & Clark expedition. Provides interdisciplinary perspective on science and engages students in collaborative scientific investigation and critical thinking. Topics include plant identification, evolution, and ecology. Meets the science requirement for the AAOT degree. Prerequisite: Pass ASC-200 or instructor consent.

ASE

Courses with this prefix will not transfer with credit to a four-year institution.

Adult High School Diploma**ASE-010 Basic Math**

.5-1.5 high school credits
Fall/Winter/Spring/Summer
60-90 hours/term

Math concepts: addition, subtraction, multiplication, division of whole numbers, fractions and decimals; percentage; measurement; graphs; ratio/proportion; basic principles of algebra and geometry. Course is geared to those students who may need a slower-paced approach. Elective credit only. Required: Instructor consent.

ASE-011 Applied Math I

.5 high school credits
Fall/Winter/Spring/Summer
60 hours/term

Presents the use of the numbers and operations of arithmetic while basic algebra and geometry are integrated throughout the course. The use of up-to-date technology is integrated. A scientific calculator is required. Required: Instructor consent.

ASE - 012 Applied Math II

.5 high school credits
Fall/Winter/Spring/Summer
60 hours/term

Presents the use of numbers and operations of arithmetic while integrating algebraic and geometric concepts throughout the course. Current technology is also incorporated. Scientific calculator required. Required: Instructor consent.

ASE-015 Basic English

.5-1.5 high school credits
Fall/Winter/Spring/Summer
60 hours/term

Review of English fundamentals of grammar, spelling, capitalization, and punctuation. Elective credit only. Required: Instructor consent.

ASE-016 Intermediate English

.5 high school credit
Fall/Winter/Spring/Summer
60 hours/term

Review of capitalization, punctuation, and spelling, with emphasis on paragraph construction. Includes practical applications of sentence patterns, subject and verb agreement, and other writing skills. Required: Instructor consent.

ASE-017 Advanced English

.5 high school credit
Fall/Winter/Spring/Summer
60 hours/term

Language arts course emphasizing grammar, sentence structure, style, clarity, logic, organization, and paragraph composition. Emphasis on transition from paragraph to essay. Required: Instructor consent.

ASE-020 Literature I

.5 high school credit
Fall/Winter/Spring/Summer
60 hours/term

Course focuses on literature from the 17th-19th centuries, including the elements and examples of prose, poetry, and drama that produce good literature. Required: Instructor consent.

ASE-021 Effective Study Skills

.5 high school credit
Fall/Winter/Spring/Summer
60 hours/term

Emphasizes learning skills for college success and targets students with pre-college level skills. Includes time management, listening/ notetaking, study/reading textbooks, concentration, test preparation/anxiety, effective use of college library resources. Required: Instructor consent.

ASE-022 Developmental English

.5-1.5 high school credits
Fall/Winter/Spring/Summer
60 hours/term

Remedial review of grammar, spelling, capitalization, and punctuation. Elective credit only. Required: Instructor consent.

ASE-026 Health I

.5 high school credit
Fall/Winter/Spring/Summer
60 hours/term

Presents issues impacting psychosocial health; applies prevention and risk-reduction concepts to health related problems. Determines the impact of behaviors that pose a threat to healthy living. Required: Instructor consent.

ASE-028 Global Studies I

.5 high school credit
Fall/Winter/Spring/Summer
60 hours/term

Focuses on geographic tools (maps, globes, charts, graphs) to explain and analyze geographical relationships and area. Identifies areas and physical features that have impacted historical and modern issues and events. Required: Instructor consent.

ASE-029 Global Studies II

.5 high school credit
Fall/Winter/Spring/Summer
60 hours/term

Focuses upon examination, prediction, and critical evaluation of the interrelationships among social, cultural, historical, economic, and environmental processes that change the characteristics of places and regions throughout the globe over time. Required: Instructor consent.

ASE-031 Studio Art I

.05 high school credits
Fall/Winter/Spring Term
60 hours/term

An overview and orientation to basic design principles using a variety of media.

ASE-032 US History I

.5 high school credit
Fall/Winter/Spring/Summer
60 hours/term

Focuses on the settlement of America to 1900, emphasizing the development of economic, political and social systems. Analyzes causes and effects of wars and domestic and foreign policy and examines the growth of technology. Required: Instructor consent.

ASE-033 US History II

.5 high school credit
Fall/Winter/Spring/Summer
60 hours/term

Focuses on the settlement of America from 1890 to the present, emphasizing the development of economic, political and social systems. Analyzes causes and effects of wars and domestic and foreign policy, and examines the growth of technology. Required: Instructor consent.

ASE-034 Government I

.5 high school credit
Fall/Winter/Spring/Summer
60 hours/term

Introduction to the basic principles of American government, including the branches of federal, state, and local government and how they interact. Required: Instructor consent.

ASE 035-Careers I

.5 high school credit
Fall/Winter/Spring/Summer
60 hours/term

Students explore skills, interests, and related careers. Presents job search, acquisition, and retention strategies; defines appropriate workplace behaviors, and analyzes workplace problems in context. Required: Instructor consent.

ASE-036 Personal Finance I

.5 high school credit
Fall/Winter/Spring/Summer
60 hours/term

Presents skills to promote realistic financial patterns, use techniques for personal income planning, record keeping, use of credit, purchase goods/services, and rights and responsibilities in the marketplace. Learners acquire basic technology skills. Required: Instructor consent.

ASE-037 Basic Developmental Reading

.5-1.5 high school credits
Fall/Winter/Spring/Summer
60 hours/term

Develops basic reading skills, including phonics, pronunciation, spelling, word attack skills, basic vocabulary, and comprehension skills. Elective credit only. Required: Instructor consent.

ASE-038 Intermediate Reading
 .5 high school credit
 Fall/Winter/Spring/Summer
 60 hours/term

Word attack, vocabulary, spelling, and reading comprehension skills to improve basic reading abilities and textbook reading strategies. Required: Instructor consent.

ASE-039 Advanced Reading
 .5 high school credit
 Fall/Winter/Spring/Summer
 60 hours/term

Develops advanced vocabulary, reading comprehension skills, critical reading, and study skills. Required: Instructor consent.

ASE-041 AHSD Life Experience Assessment
 .5-7 high school credits
 Fall/Winter/Spring/Summer
 6-60 hours/term

Assists student in documenting actual life experiences, which are then assessed toward meeting credit requirements for an Adult High School Diploma. Required: Instructor consent.

ASE-043 Cooperative Work Experience
 .5-1.5 high school credits
 Fall/Winter/Spring/Summer
 60-90 hours/term

Cooperative Work Experience. Provides field experience for developmental education students. Students are placed in non-paying or paid positions both on and off campus and meet weekly in a seminar. Required: Instructor consent.

ASE-045 Individualized Education for Adults
 0 credit, Fall/Winter/Spring/Summer
 20-240 hours/term

Individualized basic skills education for adults prepares students for upgrading basic skills and General Educational Development (GED). Required: Instructor consent.

ASE-046 Human Development
 .5-2 variable credit class
 Fall/Winter/Spring/Summer
 60-240 hours/term

Provides instruction in the areas of parent education and life skills targeted to the issues of teen parents and high school students. This course will assist students in developing positive parenting skills, understanding child development, applying appropriate practices for various developmental stages, building self-esteem, improving personal communication skills and developing survival skills.

ASE-047 Physical Education I
 .5 high school credit
 Fall/Winter/Spring/Summer
 60 hours/term

Presents a broad perspective of sports activities including team cooperation. Explores the significance of sports in a variety of cultures. Analyzes rules, procedures, and practices that are safe and effective for specific activities. Required: Instructor consent.

ASE-051 Intro: Food Preparation/Nutrition
 .5-2 credit high school credits
 Fall/Winter/Spring
 60-240 hours per term

Introduces students to food budgeting, shopping, nutrition, sanitation of food, and cooking techniques through classroom discussions, demonstrations, specific assignments and hands-on cooking and shopping experiences. Required: Instructor consent.

ASE-054 American Civics II
 .5 high school credit
 Fall/Winter/Spring/Summer
 60 hours/term

Presents basic principles and ideals embedded in American democracy. Examines documents and law in relation to American ideals and the roles, rights, and responsibilities of citizens. Explores interactions between the U.S. and other countries in a global community. Required: Instructor consent.

ASE-055 Individualized Education for Adults
 0 credit, Fall/Winter/Spring/Summer
 20-240 hours/term

Individualized basic skills education for adults prepares students for upgrading basic skills and General Educational Development (GED). Required: Instructor consent.

ASE-056 Personal Finance II
 .5 high school credit
 Fall/Winter/Spring/Summer
 60 hours/term

Explores the relationships between personal finance, workplace issues and personal choices. Presents skills to enter and advance in the workplace, promote healthy living patterns, and for personal planning. Basic technology skills are incorporated. Corequisite: ASE-057. Required: Instructor consent.

ASE-057 Careers II
 .5 high school credit
 Fall/Winter/Spring/Summer
 60 hours/term

Explores the relationships between personal finance, workplace issues and personal choices. Presents skills to enter and advance in the workplace, promote healthy living patterns, and for personal planning. Basic technology skills are incorporated. Corequisite: ASE-056. Required: Instructor consent.

ASE-058 Physical Education II
 .5 high school credit
 Fall/Winter/Spring/Summer
 60 hours/term

Presents a broad perspective of physical fitness, encouraging learners to pursue and maintain a health enhancing level of physical fitness. Identifies the basic principles of fitness development. Required: Instructor consent.

ASE-059 Health II
 .5 high school credit
 Fall/Winter/Spring/Summer
 60 hours/term

Builds on concepts of Health I. Provides a more in-depth examination of the behaviors that pose a threat to a healthy living. Further practice of effective communication skills needed at work and in the community. Required: Instructor consent.

ASE-061 General/Life Science
 .5 high school credit, Fall
 60 hours/term

Presents principles of habitat, habitat management, and wildlife science in a hands-on environment. Explores concepts of endangered species and extinction, adaptations and natural selection, life cycles, food webs, habitat, and wildlife laws. Field trip involves river rafting the Clackamas River. Required: Instructor consent.

ASE-062 Physical Science/Winter Ecology
 .5 high school credit, Winter
 60 hours/term

Presents principles of winter ecology. Students explore animal, insect, human, and plant adaptations to life in cold wintry environments. A field trip involves snowshoeing on Mt. Hood where students hike, observe animal tracks, dig and analyze snow pits, and construct a quinzhee snow hut. Required: Instructor consent.

ASE-063 General Science/Wildlife
 .5 high school credit, Spring
 60 hours/term

Presents principles of the plant kingdom in a hands-on outdoor setting. Explores plant growth, function, adaptations, and processes, ecosystem with a partially developed urban watershed. Required: Instructor consent.

ASE-064 Earth/Space Science
 .5 high school credit, Summer
 1 week

Explores the natural history of the Mt. Jefferson Wilderness in the Oregon Cascades. Students conduct field surveys of native wildlife and plants in various habitats. Prerequisites: ASE-061 (General/Life Science) or ASE-062 (Physical Science/Winter Ecology) or ASE-063 (General Science/Wildlife). Students need to be healthy and able to walk up to eight miles per day at elevations up to 7,000 feet. Required: Instructor consent.

ASE-066 Word Processing/Spreadsheet/Applications
 .5 high school credit
 Fall/Winter/Spring/Summer
 60 hours/term

Focuses on the use of technology in an educational setting, in the workplace, and in everyday life. Skills needed to operate and utilize a computer's hard drive and various software applications: Microsoft Word, Excel, Access and PowerPoint. Required: Instructor consent.

ASE-067 E-mail/Internet/Personal Applications
 .5 high school credit
 Fall/Winter/Spring/Summer
 60 hours/term

Focuses on the use of technology in an education setting, in the workplace, and in everyday life. Skills needed to operate and utilize a computer hard drive and various software applications, electronic communication and use of the World Wide Web. Discusses issues and debates concerning technology in a global society. Required: Instructor consent.

ASE-068 Literature II
 .5 high school credit
 Fall/Winter/Spring/Summer
 60 hours/term

Focuses on literature from 1850-present. Methods of identifying, understanding, interpreting, analyzing, synthesizing, and critically evaluating elements and devices of literature are presented. Utilizes a variety of literary forms and genres. Required: Instructor consent.

ASE-069 Studio Art II
 .05 high school credits
 Fall/Winter/Spring Term
 60 hours/term

An overview and orientation to color theory. Students will use various media to demonstrate color theory concepts.

ASE-071 Algebra I
 .5 high school credits
 Fall/Winter/Spring/Summer
 60 hours/term

Major topics (in an integrated approach) include the use of variables, multiplication in algebra, addition in algebra, and subtraction in algebra. Instructor consent required.

ASE-072 Algebra II
 .5 high school credits
 Fall/Winter/Spring/Summer
 60 hours/term

Major topics (in an integrated approach) include linear sentences, division in algebra, slopes and lines, exponents, quadratic equations, and linear systems. Instructor consent required.

ASE-086 General Science/Birds
 .05 high school credits
 Fall/Winter/Spring/Summer
 50 hours/term

Presents principles of general science such as scientific classification, evolution and natural selection, distinguishing fact from value, the scientific method, and current events and their correlation to historical events in science in the context of bird adaptations, origins, physiology, flight, migration, and current scientific cases.

ASE-087 Physical Science: Exploring The Nardoo
 .05 high school credits
 Fall/Winter/Spring/Summer
 60-90 hours/term

Using simulated river ecology, students investigate the chemical and physical changes the river has undergone as development of the river resources takes place. Interdependence in an ecosystem; collection and interpretation of data; and development are primary themes and issues.

ASL

American Sign Language

ASL-101 American Sign Language
 4 credits, Fall
 4 class hours/week

First term of a three-term introductory course. Everyday communication is the centerpiece of each lesson. Topics revolve around sharing information about ourselves and our environment. Grammar is introduced in context, with an emphasis on developing question and answering skills. Strategies are presented to help the student maintain a conversation.

ASL-102 American Sign Language
 4 credits, Winter
 4 class hours/week

Second term of a three-term introductory course. Emphasis will be on increasing communicative abilities. Course will focus on language functions such as making requests, describing others, and/or telling a short story. Grammar and vocabulary will also be emphasized throughout the course. Prerequisite: Pass ASL-101 or instructor consent.

ASL-103 American Sign Language
4 credits, Spring
4 class hours/week

Third term of a three-term introductory course. Emphasis will be on developing conversational competence. Course includes basic ASL vocabulary and grammar used for basic communication such as opening conversations, clarifying, giving reasons, narrating family history, correcting, and elaborating. Prerequisite: Pass ASL-102 or instructor consent.

ASL-201 American Sign Language
3 credits, not offered every year
3 class hours/week

Continues work of American Sign Language by reviewing, expanding, and perfecting expressive skill, structure, and vocabulary for the purpose of active communication. Emphasizes active communication in sign language. Meets the arts & letters requirement for the AAOT degree. Prerequisite: ASL-103 or instructor consent.

ASL-202 American Sign Language
3 credits, not offered every year
3 class hours/week

Continuation of ASL-201. Emphasizes active communication in sign language. Increased emphasis on exploring, analyzing the rules, and presenting stories and literature in sign language. Meets the arts & letters requirement for the AAOT degree. Prerequisite: ASL-201 or instructor consent.

ASL-203 American Sign Language
3 credits, not offered every year
3 class hours/week

Continuation of ASL-202. Emphasizes active communication in sign language. Increased emphasis on exploring, analyzing the rules, discussing, developing, and presenting literature and poetry in sign language. Meets the arts & letters requirement for the AAOT degree. Prerequisite: ASL-202 or instructor consent.

BA

Business Administration

BA-101 Introduction to Business
4 credits, Fall/Winter/Spring
4 class hours/week

Introduction to the American business system including business organization, accounting, finance, marketing, and management. Also offered as an online course. Recommended: Placement in RD-115.

BA-104 Business Math
3 credits, Fall/Winter
3 class hours/week

Math skills applicable to the business environment. Mark-up, mark-down, simple interest, present value, stocks, bonds, mutuals, and credit cards. Introduces accounting topics such as depreciation, financial statements, and ratios. Also offered as an online course. Prerequisite: Pass MTH-050.

BA-111 General Accounting I
4 credits, Fall/Winter/Spring
4 class hours/week

Bookkeeping and accounting systems with procedures emphasized. Accounting cycle, general and special journals, subsidiary ledgers, accounting for cash, and end-of-period operations. Also offered as an online course. Recommended: Placement in RD-115.

BA-112 General Accounting II
4 credits, not offered every year
4 class hours/week

Continues studies from General Accounting I. Includes reporting standards; accounts receivables and uncollectibles; notes payable/receivables, merchandise inventory adjustments; and property, plant and equipment. Partnership entries/procedures, corporate formation, stocks, earnings, and long-term bonds. Prerequisite: Pass BA-111.

BA-120 Project Team Tools
3 credits, Fall
3 class hours/week

Use project management tools to perform needs analysis, negotiating/contracting for goals and resources, work/task breakdown, project flowchart and schedule, resource allocation, time estimates, critical path, budgeting, contingency planning, project monitoring and reporting.

BA-121 Project Management: Workshop
3 credits, Winter
3 class hours/week

A hands-on, interactive project management simulation. Student teams will address weekly topics in the progression of managing the project and submit a report summarizing the project experience included in the student portfolio.

BA-122 Project Management: Teamwork
3 credits, Fall
3 class hours/week

Focuses on teamwork dynamics and skills for working with others; group behavior and communication skills are learned and practiced. Students study personalities, learning styles, diversity, appreciating differences and values, ethics, and achieving goals.

BA-123 Project Management: Leadership and Motivation
3 credits, Winter
3 class hours/week

Focuses on the basic principles of leadership as applied to teamwork. Basic component of organizational design and management theory, leadership is a learned skill focusing on achieving objectives utilizing human, financial, material, and organizational resources.

BA-124 Project Management: Negotiation
3 credits, Spring
3 class hours/week

Focuses on the basic principles of negotiation. Techniques and elements of negotiation are stressed. Students work alone and in groups to practice and demonstrate negotiation skills.

BA-125 Risk Management
3 credits, Spring
3 class hours/week

Basic principles of risk, systematic risk assessment, and management of risk in project management. Identifying/exploring basic principles of risk, including types, seriousness, and methods of dealing with risk; systematic risk techniques and assessment.

BA-131 Introduction to Business Computing [C]
4 credits, Fall/Winter/Spring
4 class hours/week

Use and application of Microsoft Office. Use Word, Excel, Access, and Powerpoint to create business documents. Internet features, multitasking, and File management. Designed for business majors. Also offered as an online course. Meets computer literacy requirement. Recommended: Placement in RD-115. Prerequisite: Pass BT-120 or instructor consent.

BA-156 Business Forecasting
3 credits, Winter
3 credit hours/week

Basic economic principles applied to business decision-making, forecasting, and critical thinking skills related to budgeting, planning, financial analysis, and application of business policy and practice. Designed for business majors. Also offered as an online course. Recommended: Placement in RD-115.

BA-160 Purchasing I
3 credits, not offered every term
3 class hours/week

Distance Learning: Online. Covers fundamentals of purchasing, including the role of the purchasing function, purchasing objectives and policies, operating procedures, purchase descriptions and specifications, sources of supply, types of contracts and ordering agreements, legal considerations, and ethical and professional standards.

BA-161 Purchasing II
3 credits, not offered every term
3 class hours/week

Covers more advanced purchasing concepts and techniques, such as win-win negotiations, total cost management, supplier management, continuous quality improvement, value analysis and value engineering, and inventory management. Prerequisite: Pass BA-160 or instructor consent.

BA-177 Payroll Accounting
3 credits, Winter
3 class hours/week

Basic personnel payroll records necessary in business firms, laws affecting payroll systems, procedures used in computing wages, salaries and deductions, and manual preparation of payroll records and reports. Prerequisite: Pass BA-211 or pass BT-111.

BA-200 Advanced Project Management
8 credits, Fall
4 class, 3 lab, 9 field hours/week

Practical application of project management concepts/tools; advanced project management topics/applications; preparation for PMI certification exam; case study/analysis of situations leading to effective project management strategies. Advanced exploration, innovation, and praxis.

BA-201 Advanced Project Management II
8 credits, Winter
4 class, 3 lab, 9 field hours/week

Advanced project strategies to ensure coordination and delivery. Deliver project scope reflecting quality, time, and budget hierarchy; integrate project attributes, methods, and techniques; apply sequence/control of project quality, time, and develop model presentation strategies.

BA-202 Advanced Project Management III
10 credits, Spring
4 class, 9 lab, 9 field hours/week

Analyze project systems for selection, procurement, risk, and communication effectiveness; document project results to advance organizational equity; preparation for PMI certification exam; case study and analysis of situations leading to effective project management strategies.

BA-205 Solving Communication Problems with Technology [C]
4 credits, Winter/Spring
4 class hours/week

Skills and technology needed to communicate effectively. Organize and present business information electronically, including data collection, correspondence, business reporting, business presentations, and corporate communications. Meets computer literacy requirement. Recommended: Placement in RD-115. Prerequisite: Pass BA-131 & pass WR-121.

BA-206 Management Fundamentals
4 credits, Fall/Winter/Spring
4 class hours/week

Concepts and theories of management with focus on planning, organizing, staffing, directing, and controlling. Organizational structures, planning principles, and international management techniques. Also offered as an online course. Recommended: Placement in RD-115.

BA-208 Employee Labor Relations
4 credits, Spring
4 class hours/week

Provides legal overview of employee and labor relations in union and non-union environments. Presents a realistic picture of collective bargaining/labor relations situations and highlights contemporary issues in employee relations, unions, bargaining units, and work representatives.

BA-211 Financial Accounting I
4 credits, Fall/Winter/Spring
4 class hours/week

Basic principles of accounting cycle for service and merchandising companies, journals, ledgers, accounting for cash, end-of-period operations, worksheets, entries, and financial statements. Emphasis on procedure and theory. Also offered as an online course. Recommended: Placement in RD-115.

BA-212 Financial Accounting II
4 credits, Fall/Winter/Spring
4 class hours/week

Principles and practices in service and merchandising corporations, cash controls, receivables, assets, short-term and long-term liabilities and debt, and financial statements. Corporate analysis of financial position including the cash flow statement. Also offered as an online course. Recommended: Placement in RD-115. Prerequisite: Pass BA-211.

BA-213 Decision Making with Accounting Information
4 credits, Fall/Winter/Spring
4 class hours/week

Accounting for manufacturing operations, cost systems, capital budgeting, variances and budget performance reports, job order, and process, flow, and standard costing. Presentation and interpretation of accounting data to aid decisions. Also offered as an online course. Recommended: Placement in RD-115. Prerequisite: Pass BA-212.

BA-216 Cost Accounting
3 credits, Winter
3 class hours/week

Statement analysis, budgeting, pricing concepts, production reports, cost estimation, by-products and joint products, spoilage and scrap materials, standard cost, job order, and process flow systems. Recommended: Placement in RD-115. Prerequisite: Pass BA-213.

BA-217 Budgeting for Managers

3 credits, Spring
3 class hours/week

Budgeting vocabulary, finance, record keeping, cash management, cash budgeting, and capital budgeting. Recommended that students have prior course work and/or experience in accounting or work-related budgeting. Recommended: Placement in RD-115.

BA-218 Personal Finance

3 credits, Spring
3 class hours/week

Distance Learning: Online. Goal setting, budgeting, use of credit, personal financial statements, consumer spending and saving, investment options, risk management, and estate and tax planning. Financial planning tools and practical self-assessment. Recommended: Placement in RD-115.

BA-222 Financial Management

3 credits, Winter
3 class hours/week

Concepts, techniques, and decision process to manage a firm's sources and uses of funds. Working capital, ratio analysis, leverage, operating budgets, working capital management, cost of capital, capital budgeting, and evaluation of financial alternatives. Prerequisite: Pass BA-212.

BA-223 Principles of Marketing

4 credits, Fall/Winter
4 class hours/week

Survey and application of marketing principles and vocabulary in profit and non-profit organizations. Product planning, distribution, promotion, price, and customer service are analyzed and applied. Also offered as an online course. Not offered as a lecture course every term. Recommended: Placement in RD-115.

BA-224 Human Resource Management

4 credits, Fall/Spring
4 class hours/week

Traditional, current, and emerging personnel practices. Practical and realistic approach to human resource management, employee welfare, working conditions, selection and placement, personnel functions, and the responsibilities of the personnel director. Recommended: Placement in RD-115.

BA-225 Business Report Writing

3 credits, Spring
3 credit hours/week

Focuses on the skills and techniques required to write and produce professional business reports, including research, writing, formatting, and presentation. Also offered as an online course. Recommended: Placement in RD-115. Prerequisites: Pass WR-121 & pass BA-205 or instructor consent.

BA-226 Business Law I

4 credits, Fall/Winter/Spring
4 class hours/week

Concepts, principles, and rules of law applicable to business transactions. Emphasis on constitution, courts, business crimes, torts, and consumer contract law. Also offered as an online course. Recommended: Placement in RD-115.

BA-227 Business Law II

4 credits, Winter
4 class hours/week

Emphasis on real and personal property, negotiable instruments, insurance, documents of title, secured transaction, bailments, commercial paper, agency, bankruptcy, suretyship, bulk sales, and estate planning. Also offered as an online course. Recommended: Placement in RD-115. Prerequisite: Pass BA-226.

BA-229 Employment Law

4 credits, Spring
4 class hours/week

Offers comprehensive treatment of personnel law and seeks to bridge the gap between law and human relations management. Recommended: Placement in RD-115. Prerequisite: Pass BA-224.

BA-238 Sales

3 credits, Spring
3 class hours/week

Focus on professional selling principles and techniques as applied both in business and interpersonal settings. Recommended: Placement in RD-115.

BA-239 Advertising

4 credits, Fall
4 class hours/week

Relationship to marketing, including how advertising helps accomplish marketing objectives. Advertising planning and strategy and examination of various communication vehicles carrying the advertising message. Recommended: Placement in RD-115.

BA-240 Governmental Accounting

4 credits, Fall
4 class hours/week

Accounting procedures, records, and statements to summarize and disclose the results of non-profit and governmental activities. Budgetary accounting, general, special revenue, capital projects, debt service, enterprise, and proprietary funds, general fixed asset accounts, etc. Recommended: Placement in RD-115. Prerequisite: Pass BA-212.

BA-242 Investing

3 credits, not offered every year
3 class hours/week

Studies securities, investment concepts, and economic trends for the private investor. Discusses investment objectives, portfolios, corporate securities, and securities market. Also offered as an online course. Recommended: Placement in RD-115.

BA-248 Auditing

3 credits, Spring
3 class hours/week

Auditing standards and procedures by the CPAs in the examination and issuance of audit reports. Generally accepted auditing standards and conceptual framework necessary for collection of evidence and assessment of risk. Recommended: Placement in RD-115. Prerequisite: Pass BA-213.

BA-249 Retailing

3 credits, not offered every term
3 class hours/week

Distance Learning: Online. Provides an understanding of the types of businesses, strategies, operations, formats and environments through which retailing is carried out. Takes a multi-disciplinary approach to consider the process and structure of retailing. Recommended: Placement in RD-115.

BA-250 Introduction to Small Business

3 credits, not offered every year
3 class hours/week

Managing a small business, identifying a market opportunity, developing a business plan, and meeting the competition. Also financial accounting and cash-flow projections. Recommended: Placement in RD-115.

BA-251 Office Management

3 credits, Winter
3 class hours/week

Role and responsibilities of the office manager. Analyzing business, restructuring office systems and training needs, dealing with change, staffing practices affecting human resources, managing human resources, leadership, decision-making and motivational skills, and managing teams. Also offered as an online course. Recommended: Placement in RD-115.

BA-254 Basic Compensation and Benefits

4 credits, Winter
4 class hours/week

Focuses on the importance of employees as a key element of strategic compensation/benefit programs and emphasizes general compensation topics, terminology, and practical applications to the workplace.

BA-256 Income Tax Accounting

3 credits, Fall
3 class hours/week

Detailed review of the federal tax structure as it relates to the preparation of individual tax returns. Also provides a brief overview of partnership and corporate tax returns. Recommended: Placement in RD-115.

BA-261 Consumer Behavior

4 credits, Spring
4 class hours/week

Consumer behavior and its application to marketing strategies. Concepts and models of the consumer decision-making process, personal and interpersonal factors and their impact on consumer decisions. Recommended: Placement in RD-115. Prerequisite: Pass BA-101.

BA-267 Organizational Development and Behavior

6 credits, Spring
4 class, 6 lab hours/week

Concepts of organizational design, development and behavior wherein students study, analyze, and learn to develop systems for specific management objectives. Focus is on individual, group, and organizational leadership strategies and effective self-assessment leading to improved goal convergence and productivity.

BA-268 Applied Project Demonstration

6 credits, Spring
4 class, 6 lab hours/week

This course emphasizes the demonstration of practical project management skills, including the scope, control and analysis of professional field applications with an organization, vendor or service provider. Students will prepare and submit evidence of skill application in a planned and monitored project environment.

BA-280 Business/CWE

3-6 credits
Fall/Winter/Spring
1.5 class, 9-18 job site hours/week

Cooperative work experience. On-the-job experience in a business related to the student's major course of study. Under supervision of instructor and employer. Required: Instructor consent & a CWE seminar.

BA-285 Human Relations in Business

4 credits, Fall/Winter/Spring
4 class hours/week

Basic psychology and human relations techniques in building better employer/employee relationships. Interpersonal relations both on the job and in everyday life. Recommended: Placement in RD-115.

BC

Courses with this prefix may not transfer with credit to a four-year institution unless applied as part of the 12 allowable professional technical credits for the AAOT or ASOT-Business.

Building Construction Technology

BC-100 Construction Orientation: Overview of Construction Industry [C]

1-6 credits
Fall/Winter/Spring/Summer
4 class, 7 lab hours/week

Research the materials, methods terminology, safety requirements, practices and standards of construction. Lab projects include Internet research, displays, and a journal. Meets the computer literacy requirement.

BC-101 Building Trades Print Reading: Blueprint Reading

1-4 credits
Fall/Winter/Spring
4 class, 4 lab hours/week

Read and interpret building construction drawings; identify construction terms, and information useful for estimating and scheduling. Includes reading the major components of a typical set of construction drawings, including symbols, schedules, sections and detail interpretation.

BC-102 Introduction to Applied Building Construction

1-6 credits, Spring
4 class, 7 lab hours/week

Utilize tools and equipment to accomplish projects emphasizing basic safety and industry applications. Lab projects could include carpentry, electrical, plumbing and site preparation.

BC-104 Basic Carpentry

1-6 credits, Fall/Winter/Spring
4 class, 7 lab hours/week

Research the materials, techniques and safety requirements for basic carpentry and framing applications. Hand and power tools used to complete lab projects, e.g., scale building assemblies.

BC-107 Construction Career Portfolio [C]

1-6 credits, Fall/Spring
4 class, 7 lab hours/week

Create a job-marketing tool that integrates knowledge and skills related to building construction industry. Portfolio consists of resumé, reference letters, work samples and other content that can be updated according to need or opportunity. Meets computer literacy requirement.

BC-121 Professional Computing for Construction [C]

1-4 credits, not offered every term
4 class, 4 lab hours/week

Fundamentals of professional computing equipment and software, including terminology, techniques and specifications. Includes Windows operating systems, basic computer procedures, file management and Internet. Research MSDSs, specifications and use of CAD for communicating design concepts. Meets computer literacy requirement.

BC-170 Industry Performance, Health and Safety: I
1-12 creditsFall/Winter/Spring/Summer
8 class, 14 lab hours/week

Discover industry-approved personal behavior regarding the conduct and application of specific performance, health, and safety issues.

BC-180 Building Construction Technology/CWE
2-6 creditsFall/Winter/Spring/Summer
1.5 class, 6-18 job-site hours/week

Cooperative work experience. Practical experience in the construction trades with a contractor, supplier or construction trades service provider. Required: Instructor consent & a CWE seminar.

BC-201 Construction Management I: Developing Project Expectations [C]
1-12 credits, Fall

8 class, 14 lab hours/week

Develop and communicate the processes to design a plan to meet customers' expectations and predict planned outcomes. Projects include discovery, critical path scheduling, estimating, and organizing a construction project vision. Meets computer literacy requirement.

BC-202 Construction Management II: Managing Project Expectations [C]
1-12 credits, Spring

8 class, 14 lab hours/week

Develop techniques to secure customer outcomes that meet and exceed the standards required for construction project administration. Includes bidding procedures, contract risks and liabilities, reporting methods, standards of performance, purchasing and measuring contract delivery. Meets computer literacy requirement.

BC-203 Construction Management III: Evaluating Project Expectations [C]
1-12 credits, Spring

8 class, 14 lab hours/week

Develop management evaluation strategies to measure the performance of planned outcomes which exceed customer expectations. Includes quality management that impacts the products, processes, service, environment and equity necessary for successful project outcomes. Meets computer literacy requirement.

BC-204 Residential Construction Codes
1-12 creditsFall/Winter/Spring/Summer
8 class, 14 lab hours/week

Examine and interpret codes and regulations that govern residential one- and two- family dwellings. Includes researching structural, plumbing, electrical and mechanical codes of the International Residential Code (IRC).

BC-205 Commercial & Industrial Codes
1-12 creditsFall/Winter/Spring/Summer
8 class, 14 lab hours/week

Examine and interpret codes and regulations that govern commercial and industrial construction industry. Includes researching International Building Code (IBC), International Mechanical Code (IMC), and International Plumbing Code (IPC).

BC-230 Home Inspection I: Residential Real Estate Property Orientation
1-4 creditsFall/Winter/Spring/Summer
4 class, 4 lab hours/week

Research applications of home inspection industry. Explore materials, methods and techniques that govern residential property system performance. Develop administrative protocols needed for home inspection business.

BC-231 Home Inspection II: Interior Systems Evaluation
1-4 creditsFall/Winter/Spring/Summer
4 class, 4 lab hours/week

Explore guidelines and applications to evaluate the interior components of existing residential real estate. Survey and evaluate the status of interior components. Develop reporting systems to communicate performance outcomes.

BC-232 Home Inspection III: Exterior Systems Evaluation
1-4 creditsFall/Winter/Spring/Summer
4 class, 4 lab hours/week

Explore guidelines and applications to evaluate the exterior components of existing residential real estate. Survey and evaluate the status of exterior components. Develop reporting systems to communicate performance outcomes.

BC-233 Beyond ADA Standards
1-4 creditsFall/Winter/Spring/Summer
4 class, 4 lab hours week

A systematic overview of residential building construction based on the principals of Universal Design techniques. Develop knowledge, understanding and identify accessibility problems and solutions in existing facilities.

BC-270 Industry Performance, Health and Safety: II
1-12 creditsFall/Winter/Spring/Summer
8 class, 14 lab hours/week

Develop integrating strategies to advance industry-approved behavior regarding the conduct and application of specific performance, health, and safety issues for industry.

BC-280 Construction Projects/CWE
2-6 creditsFall/Winter/Spring/Summer
1.5 class, 6-18 job-site hours/week

Cooperative work experience. Practical experience in construction project management, estimating, scheduling, site inspection or other construction professional field applications. Required: Instructor consent & a CWE seminar.

BC-286 Advanced Construction Applications
1-12 creditsFall/Winter/Spring/Summer
8 class, 14 job-site hours/week

Practical application of construction project management in a field experience. Students utilize estimating, scheduling, site inspection and other construction professional field applications. Required: Instructor consent.

BI**Biology****BI-055 Introduction to Human Biology**
3 credits, Fall
2 class, 3 lab hours/week

Designed for medical assistants and secretaries. Studies the structure and function of the human body, beginning with the cell. Includes organization of tissues, organs, systems, and structure and functions of body systems.

BI-101 General Biology

4 credits, Fall/Winter/Spring/Summer
3 class, 3 lab hours/week

A laboratory course for non-science majors. Studies the cellular aspects of biology including genetics. Meets the science requirements for the AAOT degree. Also offered as an online course Fall/Winter/Spring/Summer. Recommended: Pass MTH-060; placement in RD-115 & placement in WR-121.

BI-102 General Biology

4 credits, Fall/Winter/Spring/Summer
3 class, 3 lab hours/week

A laboratory course for non-science majors emphasizing an evolutionary approach to animal systems. Meets the science requirement for the AAOT degree. Also offered as an online course Fall/Winter/Spring/Summer. Prerequisite: Pass BI-101.

BI-103 General Biology

4 credits, Fall/Spring/Summer
3 class, 3 lab hours/week

A laboratory course for non-science majors emphasizing an evolutionary approach to plants and ecosystems. Meets the science requirement for the AAOT degree. Also offered as an online course Fall/Spring/Summer. Prerequisite: Pass BI-102.

BI-130 Mushroom ID & Taxonomy

4 credits, Fall
3 class hours/week + mandatory lab/
field trips

A lab course for liberal arts majors exploring the complexity and diversity of mushrooms in the Pacific Northwest Ecosystem. Introduction to identification, basic biological principles, life cycles, and toxicology. Field trips and collection required. Meets the science requirement for the AAOT and ASOT-Business degrees.

BI-160 Bird ID & Taxonomy

3 credits, Spring
3 class hours/week

Bird identification, classification, behavior. Identification techniques applied to birds through lectures, slide presentations, and field trips to Malheur, Klamath Marsh, Oregon Cascades, Sauvie Island, and Oregon Coast wildlife refuges.

BI-160L Bird ID & Taxonomy Lab

1 credit, Spring
4 weekend field trips

A lab to accompany the BI-160 lecture. Focuses on field identification of common Oregon birds by sight, sound, and habitat. Combination of BI-160 and BI-160L meets the science requirement for the AAOT and ASOT-Business degrees.

BI-163 Malheur Field Trip

1 credit, Spring
4 day field trip

Study of plants, animals, geology, and history of High Desert Country at Malheur Environmental Field Station in southeast Oregon. Required: Instructor consent.

BI-165D Natural History of SW Deserts

3 credits, Spring
9 day field trip

Plants, animals, geology, and environmental issues of the Great Basin Region and Death Valley National Park. On-site study. A nine-day trip through Southwestern United States desert regions. Required: Instructor consent.

BI-165C Natural History/Oregon Coast

3 credits, not offered every term
3 class hours/week

Explores the natural processes that form our Northwest coastal environment: geologic development, shoreline processes, oceanography, and environmental hazards. Topics include the ecology of marine mammals, birds, estuaries, tidepools, sand dunes, and coastal forests.

BI-165CL Natural History/Oregon Coast Lab

1 credit, not offered every term
4 weekend field trips + lab exercises

A lab to accompany the BI-165C lecture. Field trips focus on the plants, animals, geology, and environmental issues of Oregon Coast. Combination of BI-165C and BI-165CL meets the science requirement for the AAOT and ASOT-Business degrees.

BI-204 Elementary Microbiology

4 credits, Winter
3 class, 3 lab hours/week

A lab course with environmental focus. Explores microscopic life, its importance in the environment, industry and infectious disease. Labs provide practice with aseptic technique and introduces tools and methods used in the study of microorganisms.

BI-211 Biology (Science Majors)

5 credits, Fall
4 class, 3 lab hours/week

A lab course for biology majors and preprofessional students. An evolutionary approach to cell structure, organization and metabolism, genetics and evolution. Meets the science requirement for the AAOT degree. Recommended: Pass MTH-105 or pass MTH-111; placement in RD-115 & placement in WR-121. Corequisite: CH-104 or CH-221.

BI-212 Biology (Science Majors)

5 credits, Winter
4 class, 3 lab hours/week

A lab course for biology majors and preprofessional students. An evolutionary approach to animal structure, systems and metabolism. Meets the science requirement for the AAOT degree. Prerequisite: Pass BI-211. Corequisite: CH-105 or CH-222.

BI-213 Biology (Science Majors)

5 credits, Spring
4 class, 3 lab hours/week

A lab course for biology majors and preprofessional students. An evolutionary and ecological approach to kingdoms, plant structure, systems and metabolism; ecosystems. Meets the science requirement for the AAOT degree. Prerequisite: Pass BI-212. Corequisite: CH-106 or CH-223.

BI-231 Human Anatomy/Physiology I

4 credits, Fall/Summer
3 class, 3 lab hours/week

A lab course designed for students entering physical education or medically related fields. Includes body organization, terminology, tissues, and a study of the integumentary, skeletal, and nervous systems. Meets the science requirement for the AAOT degree. Recommended: Placement in MTH-105 or MTH-111; placement in RD-115 & placement in WR-121. Prerequisites: Pass BI-199 & pass CH-199.

BI-232 Human Anatomy/Physiology II

4 credits, Winter/Summer
3 class, 3 lab hours/week

A lab course covering structure and function of the muscular, cardiovascular, lymphatic, and respiratory systems. Meets the science requirement for the AAOT degree. Prerequisite: Pass BI-231("C" or better).

BI-233 Human Anatomy/Physiology III
4 credits, Spring/Summer
3 class, 3 lab hours/week

A lab course covering neuroendocrine control, digestive, excretory, and reproductive systems. Study of fluid, electrolyte, and acid base balance. Meets the science requirement for the AAOT degree. Prerequisite: Pass BI-232("C" or better).

BI-234 Introductory Microbiology
4 credits, Fall/Winter/Spring
3 class, 3 lab hours/week

A lab course required for nursing and dental hygiene majors (medical emphasis). Includes characteristics, physiology and growth requirements of microorganisms, interactions between humans and microorganisms, immunology, infection, and principles of microbial control. Also offered as an online course Fall/Winter/Spring. Prerequisites: Pass BI-199 & pass CH-199.

BI-280 Biology/CWE
2-6 credits

Fall/Winter/Spring/Summer
1.5 class, 6-18 job site hours/week

Cooperative work experience. Provides students with on-the-job work experience in the field of biology. Required: Instructor consent & a CWE seminar.

BOT

Botany

BOT-156 Plant Identification & Uses

4 credits, Spring
3 class hours/week + mandatory lab/field trips

A lab course for liberal arts majors introducing botanical identification and emphasizing Native American uses of various plants commonly found in the Pacific Northwest. Basic biological principles, life cycles, floral formulas, ecology and taxonomy. Field trips and lab participation required. Meets the science requirement for the AAOT and ASOT-Business degrees.

BOT-201 Botany
4 credits, Fall, not offered every year
3 class, 3 lab hours/week

A lab course with an evolutionary approach to biochemistry, plant cell structure, genetics, evolution and classification. Meets the science requirement for the AAOT degree. Recommended: Placement in MTH-105 or MTH-111; placement in RD-115 & placement in WR-121.

BOT-202 Botany
4 credits
Winter, not offered every year
3 class, 3 lab hours/week

A lab course with an evolutionary approach to plant tissues, organs, structure, metabolism, nutrition, development and morphogenesis. Meets the science requirement for the AAOT degree. Recommended: Placement in MTH-105 or MTH-111; placement in RD-115 & placement in WR-121.

BOT-203 Botany
4 credits
Spring, not offered every year
3 class, 3 lab hours/week

A lab course with an evolutionary approach to kingdom survey, plant phyla and orders, reproduction and ecosystems. Meets the science requirement for the AAOT degree. Recommended: Placement in MTH-105 or MTH-111; placement in RD-115 & placement in WR-121.

BT

Courses with this prefix may not transfer with credit to a four-year institution unless applied as part of the 12 allowable professional technical credits for the AAOT or ASOT-Business.

Business Technology

BT-101 Introduction to Online Learning
1 credit, Fall/Winter/Spring
11 online hours/term

This is an introductory course for students who are new to web-based courses. The course will include online course fundamentals, internet fundamentals, technique requirements, e-mail techniques, and tips for success in online courses.

BT-105 Computerized Accounting
3 credits, Spring
3 class hours/week

Hands-on experience using integrated accounting software. Currently using Quickbooks. Emphasis on performing general ledger, accounts receivable, and accounts payable functions. Also offered as an online course. Prerequisite: Pass BA-211 or pass BA-111.

BT-112 Front Desk: Medical Office Practice
3 credits, Fall
3 class hours/week

Fundamental information required for employment for a front desk type clerical position in a medical office. Examines medical law and bioethics and introduces business students who plan to work at the Afront desk@ or other clerical area of a medical office to the administrative and transdisciplinary skills/competencies of the medical field.

BT-113 Medical Coding for the Physician's Office
3 credits, Spring
3 class hours/week

This course prepares the student for work in the physician's office in the areas of accurate medical coding and claims processing. Coding rules and applications as well as specific insurance carrier details will be presented. Prerequisite: Pass BT-145.

BT-120 Personal Keyboarding [C]
2 credits, Fall/Winter/Spring
2 class, 1 lab hour/week

Basic instruction on electronic alphanumeric keyboard. Provides practice for speed and accuracy with individuals program. Students will develop the necessary skills to effectively use the Internet, use e-mail, and create simple documents. Meets computer literacy requirement.

BT-122 Keyboarding Skillbuilding
2 credits, Fall
2 class, 1 lab hour/week

Designed to improve typing proficiency using microcomputers. Students will refine and further develop speed and accuracy skills learned in BT-120 Personal Keyboarding. Prerequisite: Pass BT-120 or instructor consent.

BT-124 Business Editing I

3 credits, Fall/Winter
3 class hours/week

Course builds communication skills through the study of correct usage of grammar, spelling, effective writing and editing principles. Also offered as an online course. Recommended: Placement in RD-115.

BT-125 Business Editing II

3 credits, Winter
3 class hours/week

Course follows BT-124 and will continue to build communication skills by studying correct grammar, spelling, punctuation, vocabulary usage, and writing principals. Also offered as an online course. Prerequisite: Pass BT-124, "C" or better.

BT-145 Medical Insurance & Billing

3 credits, Winter
3 class hours/week

Computer-based record keeping activities in a medical office including scheduling patients and preparing the daily patient list, making entries for patient accounts (receipts and statements), processing accounts payable (check writing, preparing bank deposits, and accounting for daily cash balances), and handling health insurance forms. Note: This course does not meet the requirement for the Medical Assistant certificate.

BT-160 Word I [C]

3 credits, Fall/Winter/Spring
3 class, 2 lab hours/week

Create and print a variety of business documents. Formatting skills include changing margins, indenting text, manipulating tabs, super/subscript test, and creating section/page breaks. Enhance documents using special features. Introduction to Internet. Recommended: 35 words per minute typing skill. Meets computer literacy requirement. Also offered as an online course. Prerequisite: Pass BT-120 or instructor consent.

BT-161 Word II [C]

3 credits, Fall/Winter/Spring
3 class, 2 lab hours/week

Create, customize, and print a variety of business documents, such as newspaper columns, merging letters and mailing labels, and tables. Formatting and special features. Internet usage includes creating a web page. Recommended: 40 words per minute typing skill. Meets computer literacy requirement. Also offered as an online course. Prerequisite: Pass BT-160.

BT-170 Access [C]

3 credits, Spring
3 class, 2 lab hours/week

Study and application of Microsoft Access involving database creation, queries, forms, and reports. Business applications include performing calculations on databases, adding graphics, creating multiple forms enhanced with Internet hyperlink, and composing text. Meets computer literacy requirement. Prerequisite: Pass BT-120 or instructor consent.

BT-176 Excel [C]

3 credits, Fall/Winter

3 class, 2 lab hours/week

Study and application of Microsoft Excel involving spreadsheets, graphics, and database. Business applications include utilizing web queries, adding hyperlink to a worksheet, saving worksheets as HTML files, and object linking and embedding with other applications. Meets computer literacy requirement. Also offered as an online course. Prerequisite: Pass BT-120.

BT-181 FrontPage

3 credits, not offered every term

3 class hours/week

Distance Learning: Online. Introduction to Microsoft FrontPage. Covers web page development and web site management using FrontPage's comprehensive set of editing and administrative tools. Web page design and editing, web site organization and management and fundamental concepts of the WWW. Prerequisite: Pass BA-131 or pass CS-121.

BT-216 Office Procedures

4 credits, Spring

4 class hours/week

Presents critical thinking, problem solving, and collaborative learning; skills and knowledge are applied to business office operations, including communications, technology, records management, work environment, travel, mail, and career planning. Prerequisite: Pass BT-160.

BT-220P Desktop Publishing I:

PageMaker

3 credits, Winter

3 class, 1 lab hour/week

Introduction to electronic page layout and production using Adobe PageMaker. Covers fundamental program functions and techniques for working with text and graphics to create professional-looking business publications. Also offered as an online course. Prerequisite: Pass BA-131 or pass CS-121, or instructor consent.

BT-262 Integrated Projects [C]

3 credits, Spring
3 class, 2 lab hours/week

Advanced level Microsoft Word uses desktop publishing attributes in creating business forms, outlines, master documents, templates, and specialized tables and indexes. Advanced formatting features and functions. File management. Introduction to machine transcription. Recommended: 45 words per minute typing skill. Meets computer literacy requirement. Prerequisite: Pass BT-161.

CAD

Courses with this prefix may not transfer with credit to a four-year institution unless applied as part of the 12 allowable professional technical credits for the AAOT or ASOT-Business.

Computer-Aided Drafting

See also Drafting (CDT).

CAD-141 AutoCAD LT Level I

3 credits, Fall/Winter/Spring/Summer
32 hours/11 weeks

Distance Learning course. AutoCAD LT user interface, drawing setup parameters, coordinate entry, 2D geometric entities, line types, object snaps, selection sets, display control functions, text creation, 2D editing commands, inquiry commands, layers and basic dimensioning.

CAD-142 AutoCAD LT Level II

3 credits

Fall/Winter/Spring/Summer

32 hours/11 weeks

Distance Learning course. Advanced features of AutoCAD LT. Dimensioning techniques/styles. Creating/managing symbols, externally referenced files and block attributes. Multi-view paper space layout, 3D drafting options, customized menus, and Internet utilities. Recommended: CAD-141.

CAD-149 Special Projects/CAD

1-6 credits, not offered every term

6 class hours/week

Content varies based on student objectives.

CAD-151 AutoCAD Level I

3 credits Fall/Winter/Spring/Summer
32 class hours/2 weeks

Introduction to AutoCAD basics including drawing setup, coordinate entry methods, 2D drawing and editing, object snaps, polar tracking, text management, display control, utilizing layers and basic plotting techniques. Recommended: Working knowledge of Windows.

CAD-152 AutoCAD Level II

3 credits Fall/Winter/Spring/Summer
32 class hours/2 weeks

Advanced AutoCAD features including drawing and editing complex lines, dimensioning techniques, hatching, creating blocks and symbol libraries, managing block attributes, working with external references (xrefs). Recommended: CAD-151.

CAD-155 AutoCAD Menu Design

3 credits, not offered every term
32 class hours/2 weeks

Creation and customization of AutoCAD menus including design of screen menus, pull-down and toolbar menus, and creation of macros. Recommended: CAD-152.

CAD-156 AutoLISP I

3 credits, not offered every term
32 class hours/2 weeks

Introduction to AutoLISP to create custom command functions. Recommended: CAD-155.

CAD-157 AutoLISP II

3 credits, not offered every term
32 class hours/2 weeks

Advanced AutoLISP functions to create custom commands. Recommended: CAD-156 or equivalent competency.

CAD-170 Intro to VBA Programming

1 credit, not offered every term
16 class hours/term

Introduction to Visual Basics for Applications (VBA) programming language for AutoCAD. Basics of VBA are explained so that students can create VBA macros that create and modify AutoCAD entities, interact with the user, select drawing objects and manage AutoCAD's symbol tables.

CAD-171 Advanced VBA Programming

1 credit, not offered every term
16 class hours/term

Advanced VBA programming techniques including how to manage blocks and attributes, work with xrefs, and plot drawings. Other topics include how to create programs using VBA forms and share data with other Microsoft applications using ActiveX/Automation. Recommended: CAD-170.

CAD-210 Autodesk Architectural Desktop

2 credits, not offered every term
24 class hours/term

Explore uses of Architectural Desktop to create a virtual building model. Covers walls, windows, doors, roofs, & stairs according to real world properties. Create model which generates floor plans, elevations, and sections.

CAD-220 Microstation for Autocad User

1 credit, not offered every term
16 class hours/term

Presents a quick summary of specific features in AutoCAD, followed by the related features in MicroStation. Designed for those who work with both products, or will transition from AutoCAD to MicroStation software.

CAD-251 Autodesk Land Desktop

2 credits, not offered every term
24 class hours/term

Use LDT to plan and edit sites, as well as create and label survey points, create and edit surfaces and contours, define and label roadway alignments, size and label parcels. Recommended: CAD-152 or AutoCAD experience.

CAD-252 Autodesk Land Desktop - Civil Design

2 credits, not offered every term
24 class hours/term

Analyze project data, create existing and finished ground profiles, use roadway templates for transportation engineering, site development and grading, perform volumetric calculations, define pipe runs, hydrological site analysis, automate sheet creation. Recommended: CAD-251.

CAD-253 Autodesk Land Desktop - Earthworks

1 credit, not offered every term
16 class hours/term

Use LDT's extensive grading features to design finished ground surfaces. Review surface editing techniques. Analyze slope and elevation information and calculate volumes. Recommended: CAD-251.

CAD-255 Autodesk Map

1 credit, not offered every term
16 class hours/term

Digitize maps; import ESRI® and Microstation® files; clean-up maps; share maps across network; manage attribute data; attach databases to maps; build and query topologies; create thematic maps and legends; integrate georeferenced images; and plot map sets. Recommended: CAD-251.

CAD-293 Solid Works

4 credits, not offered every term
48 class hours/term

Introduction to parametric solid modeling. Create sketches and build solid models. Create fillets, cuts, chamfers, holes, shells, lofts, and sweeps. Extract 2D documentation from 3D models, and detail the drawings. Build a mechanical assembly.

CAD-295 Autodesk Inventor

3 credits, not offered every term
32 class hours/term

Fundamentals of Autodesk Inventor. Covers features necessary to create and edit parts, assemblies, and drawings in 3D solid modeling design format. Covers basic modeling techniques and introduces Inventor's Design Support System. Recommended: Windows 2000 and Excel knowledge.

CDT

Courses with this prefix may not transfer with credit to a four-year institution unless applied as part of the 12 allowable professional technical credits for the AAOT or ASOT-Business.

Drafting

See also Computer-Aided Drafting (CAD).

CDT-101 Drafting Technology Survey

1-3 credits
Fall/Winter/Spring/Summer
6 class hours/week

Exploration of drafting technology and the companies that hire the drafter. Includes field trips, presentations by employers and former students, and hands-on CAD projects in a variety of drafting disciplines.

CDT-102 Sketching & Problem Solving

1-3 credits

Fall/Winter/Spring/Summer

6 class hours/week

Problem solving, freehand sketching, lettering and drafting standards for basic engineering projects. View selection, dimensions, 3rd and 1st angle projection. Machine feature symbols, auxiliary views; basic sectioning. Problem solving in individual and group settings.

CDT-103 Computer-Aided Drafting I

1-4 credits

Fall/Winter/Spring/Summer

8 class hours/week

Introduction to drafting applications using AutoCAD. Problem solving, drawing layout, orthographic multi-view projection, line types, geometric construction, current drafting techniques. Use industry standards for CAD drawing, editing, file management, dimensions and notes.

CDT-104 Professional Computing Basics [C]

1-3 credits

Fall/Winter/Spring/Summer

6 class hours/week

Professional computing techniques, knowledge, skills, fundamentals of computing equipment, specifications, terminology, and CAD software, Windows functions and environment. Create and manage network file systems. Internet, E-mail, Web Browsers. Create professional technical documents. Meets computer literacy requirement.

CDT-105 Computer-Aided Drafting II

1-4 credits

Fall/Winter/Spring/Summer

8 class hours/week

Create, modify, and manage dimension styles for multiple industry disciplines. Dimensioning with tolerances. Scaled drawing output to plotting device using paper space layouts and viewports. Mechanical drawings, multi-view projection, auxiliary views. Recommended: CDT-103.

CDT-106 Applied Descriptive Geometry

1-3 credits, Fall/Winter/Spring

6 class hours/week

Graphical solutions to imaginary and visualization problems. Applies concepts of true length, true shape, and point location, to simplify complex design problems. Recommended: CDT-103 & MTH-050.

CDT-107 Computer-Aided Drafting III

1-4 credits

Fall/Winter/Spring/Summer

8 class hours/week

Create and manage symbols, and utilize externally referenced drawings. Attribute definition, editing, and management. Drawing thread representations, fasteners, springs, surface finishes, section views, and welding symbols. Total drawing environment management and editing. Recommended: CDT-105.

CDT-108 CAD 3D

1-3 credits

Fall/Winter/Spring/Summer

6 class hours/week

Construct 3D surface and solid models using 3D coordinates, user coordinate systems, and standard editing commands. Create a rendered scene of the 3D model with lighting and shading. Recommended: CDT-103, CDT-104 & CDT-105.

CDT-108A Introduction to Solid Modeling

1-3 credits, Fall/Spring

6 class hours/week

Parametric solid modeling. Design 3D parts and assemblies. Implement 2D documentation of 3D parts to industry standards. Build a mechanical assembly. Develop sheet metal flat patterns. Create working kinematic sketches. Recommended: CDT-105 and MTH-080.

CDT-109 Project Drafting I

1-5 credits

Fall/Winter/Spring/Summer

10 class hours/week

Course is designed to incorporate the necessary detail and assembly drawings required to describe an industrial product. Special emphasis is placed on use of Machinery's Handbook, ASME standards, vendor information, and other general references. Recommended: CDT-105 & MTH-080

CDT-109A Project Drafting I – CAD/CAM

1-2 credits

Fall/Winter/Spring/Summer

4 class hours/week

Course is designed to incorporate the necessary detail and assembly drawings required to describe an industrial product. Special emphasis is placed on use of Machinery's Handbook, ASME standards, vendor information, and other general references. Recommended: CDT-105

CDT-110 Kinematics Drafting

1-3 credits, Fall/Spring

6 class hours/week

Course introduces students to techniques required of drafters who work with machine designers. Students learn symbols common to kinematics drafting. CAM design, gears and belt/chain drives presented. Emphasis placed on using parts catalogs and Machinery's Handbook. Recommended: CDT-105, CDT-106. MTH-080

CDT-111 Geometric Dimensioning & Tolerancing

1-3 credits

Fall/Winter/Spring/Summer

6 class hours/week

ASME Y14.5M application. Three-plane theory, interpret terms and symbols of geometric tolerancing: apply form, profile and location tolerances on drawings. Includes print reading. Also offered as Distance Learning course. Recommended: CDT-101, CDT-105, MTH-050.

CDT-111A Refresher Course/Geometric Dimensioning & Tolerancing Exam

2 credits, not offered every term

4 class hours/week

Principles of Geometric Dimensioning and Tolerancing as interpreted in ASME Y 14.5M-1994. Reference to practices as well as modifications to the ANSI Y 14.5-1982. For inspectors, machinists, drafters, and engineers preparing for the certification exam.

CDT-201 AutoCAD Customization

1-3 credits, Winter/Spring/Summer

6 class hours/week

Techniques for customizing the AutoCAD menu system and drawing environment including creating command aliases, creating and modifying toolbars, pull-down menus, image tile menus and cursor menus. No computer programming required. Recommended: CDT-105.

CDT-202 Architectural Drafting I

1-4 credits

Fall/Winter/Spring/Summer

8 class hours/week

Drawings required to get a building permit. Creating drawing blocks typically used in compiling a set of plans as well as the drawings of a floor, roof, electrical and foundation plans, elevations, and wall sections. Recommended: CDT-105, MTH-050.

CDT-203 Sheet Metal Drafting

1-3 credits, Winter/Spring/Summer
6 class hours/week

Introduction to drawing HVAC plans, and the basics of pattern development, material bending, seams, and intersection of geometric shapes used in the sheet metal fabrication industry. Recommended: CDT-105, CDT-106, MTH-050.

CDT-204 Civil Drafting

1-3 credits, Fall/Winter/Spring
6 class hours/week

Course covers leveling, longitude and latitude, map scales, symbols, legal descriptions, plot plans, contours, profiles, and cut and fill (earthworks). The course explores many aspects of civil drafting. Recommended: CDT-105, MTH-080.

CDT-206 CAD/CAM Integration

1-2 credits, Fall/Spring
4 class hours/week

Convert CAD drawings to computer-numerical control (CNC) machine code. Create tool paths and write code for machining mechanical parts. Includes machining projects developed using a variety of industry-standard software. Recommended: CDT-105.

CDT-207 Introduction to AutoLISP

1-3 credits
Fall/Winter/Spring/Summer
6 class hours/week

Introduction to AutoLISP programming language. Basics of AutoLISP are explained so students can create AutoLISP functions and program files that automate repetitive or redundant tasks, define new AutoCAD commands and increase drafting productivity. Recommended: CDT-201

CDT-208 Schematic Drafting

1-3 credits
Fall/Winter/Spring/Summer
6 class hours/week

Course introduces students to drafting documents encountered in electrical and electronic drafting. Student is not required to know electrical or electronics, but will be introduced to component layout and basic understanding of circuits.

CDT-209 Structural Drafting I

1-3 credits
Fall/Winter/Spring/Summer
6 class hours/week

Methods and drawings of commercial drafting. Includes creating drawing details typically associated with timber, steel, concrete block, and cast in place concrete construction. Using engineering sketches, making revisions and specifying materials using standard reference materials. Recommended: CDT-105, CDT-202.

CDT-210 Industrial Pipe Drafting

1-3 credits, Fall/Winter/Spring
6 class hours/week

Course explores types of drawings related to industrial pipe drafting: flow diagrams, general arrangements, plans, elevations, isometrics, and spool drawings. Emphasizes proper layout techniques, line weights, pipe fitting symbols, dimensioning, labeling standards, and vendor catalogs. Recommended: CDT-105, MTH-050.

CDT-211 CAD Technical Communication

1-3 credits, Fall/Spring
6 class hours/week

Explores isometric drawing in AutoCAD. Creation of reports with graphics utilizing a variety of software. Covers operation manuals, use of graphics, tables, and imported images in constructing a formal report. Construct a resume and portfolio. Prerequisites: CDT-107, CDT-108, WR-101.

CDT-212A Architectural Drafting II

1-3 credits
Fall/Winter/Spring/Summer
6 class hours/week

Create architectural drawings of single-level residence. Visit homes, observe common design practices, and assemble photos. Create a floor plan, site plan, roof plan, front elevation, sections, cabinet drawings, and working drawings fully explaining design. Prerequisite- CDT-202. Recommended: CDT-214.

CDT-212B Architectural Materials

1-2 credits
Fall/Winter/Spring/Summer
4 class hours/week

Create structural drawings for residence drawn in CDT-212 using western platform construction and engineered lumber. Explore methods of sizing required structural materials for plan using varied methods, complete roof framing, wall framing and foundation plan. Co-requisite: CDT-212A. Recommended: CDT-214.

CDT-213 Architectural Drafting III

1-4 credits
Fall/Winter/Spring/Summer
8 class hours/week

Design and complete a set of plans for a one story structure with a daylight basement constructed using western platform construction methods. Students design all structural members and are introduced to methods used to resist lateral forces. Recommended: CDT-212A, CDT-212B. Corequisite: CDT-219.

CDT-214 Building Codes

1-2 credits, Fall/Winter/Spring
4 class hours/week

Introduces building codes that govern residential and light commercial construction in the Portland Metropolitan tri-county area. Explore codes as they relate to access, egress, construction methods and ADA requirements.

CDT-215 Structural Drafting II

1-4 credits
Fall/Winter/Spring/Summer
8 class hours/week

Complete a partial set of architectural and structural drawings for a concrete block structure. Projects include some design as well as working from engineering sketches and calculations. Recommended: CDT-209.

CDT-216 Structural Drafting III

1-4 credits
Fall/Winter/Spring/Summer
8 class hours/week

Complete a partial set of architectural and structural drawings for a tilt-up concrete structure. Project includes some design as well as working from engineering sketches and calculations. Recommended: CDT-215.

CDT 217 Introduction to Remodeling
1-4 credits, Fall/Winter/Spring
8 class hours/week

Create residential project consisting of design and drafting of an addition to an existing single-family residence. A commercial project involves the drafting for tenant improvements for the warehouse to be completed in CDT-215. Prerequisite: CDT-212A, CDT-212B.

CDT-219 Architectural Detailing
1-3 credits, Fall/Winter/Spring
6 class hours/week

Create common details associated with wood frame construction including common single and multi-level framing connections using lumber and engineered materials, lateral connections, and a fire-place section. Prerequisite: CDT-202.

CDT-220 Modeling & Animation I
1-3 credits, not offered every term
6 class hours/week

Create objects using animation software. Apply modifiers to change object shape. Texture maps, lighting, and cameras. Storyboarding and complex interactions between elements of the scene. Rendering, animation and postproduction techniques. Recommended: CDT-108 or CAD-154.

CDT-221 Digital Image Creation
1-2 credits, not offered every term
4 class hours/week

Use paint programs to create texture maps and digital images. Scanning of existing images and digital photography is demonstrated. The use of digital paint tools are explored and implemented to create digital images.

CDT-222 Modeling & Animation II
1-3 credits, not offered every term
6 class hours/week

Use animation software for the purpose of creating a short story animation. A complete storyboard is produced and used. Production consists of model creation, scenes with light cameras and special effects. Student teams produce a short movie. Recommended: CDT-220.

CDT-223 Inventor Fundamentals
1-3 credits, not offered every term
6 class hours/week

Introduces AutoCAD Inventor as a feature-based, parametric 3D design tool. Develops fundamental knowledge in part and assembly modeling, using adaptive features and parts, utilizing work groups, surfacing basics, managing data & the Engineer's Notebook. Recommended: Basic working knowledge of Windows operating system and Microsoft Excel.

CDT-224 Professional Web Design
1-3 credits, not offered every term
6 class hours/week

Introduction to the design, creation and management of professional web pages. Basic and intermediate HTML document creation, introduction to JAVASCRIPT, use and manipulation of graphic image files, animating web page graphics, HTML forms. Recommended: CDT-104.

CDT-225 Advanced Solid Modeling
1-3 credits, not offered every term
6 class hours/week

Advanced features of Solid Works will be discussed and problems will be worked that exemplify them. Subjects include equations, configurations, design tables and dynamics. Prerequisites: CDT-108A or CAD-293 or instructor consent.

CDT-226 VBA for Autocad
1-3 credits, not offered every term
6 class hours/week

An introduction to Object Oriented Programming using the Visual Basic for application (VBA) programming language for AutoCAD. The basics of Visual Basic programming are explained to demonstrate how to create useful VBA macros. Prerequisite: CDT-207.

CDT-280 Drafting Technology/CWE
2-6 credits
Fall/Winter/Spring/Summer

1.5 class, 6-18 job site hours/week
Cooperative work experience. Students keep a bi-weekly employment log and prepare a portfolio including a resume, sample drawings, and recommendations. Required: Instructor consent & a CWE seminar.

CDT-281 Drafting Technology Accelerated Degree/CWE
2-6 credits

Fall/Winter/Spring/Summer
1.5 class, 6-18 job site hours/week
Cooperative work experience. Combines work experience in drafting and design with preparation of an updated resume and an information interview. Corequisite: CWE-281 for Drafting Technology Accelerated Degree students. Required: Instructor consent.

CDT-282 Drafting Technology Accelerated Degree/CWE
2-6 credits

Fall/Winter/Spring/Summer
1.5 class, 6-18 job site hours/week
Cooperative work experience. Combines work experience in drafting and design with company research and networking, and time management. Corequisite: CWE-282 for Drafting Technology Accelerated Degree students. Required: Instructor consent.

CDT-283 Drafting Technology Accelerated Degree/CWE
2-6 credits

Fall/Winter/Spring/Summer
1.5 class, 6-18 job site hours/week
Cooperative work experience. Combines work experience in drafting and design with dealing with angry people, diversity in the work place, and sexual harassment. Corequisite: CWE-283 for Drafting Technology Accelerated Degree students. Required: Instructor consent.

CDT-284 Drafting Technology Accelerated Degree/CWE
2-6 credits

Fall/Winter/Spring/Summer
1.5 class, 6-18 job site hours/week
Cooperative work experience. Combines work experience in drafting and design with vertical and horizontal working relationships, the mutual reward theory, ethics in the work environment, age difference, irritation threshold, and leadership goals. Corequisite: CWE-284 for Drafting Technology Accelerated Degree students. Required: Instructor consent.

CDT-295 Tool Design

1-3 credits, not offered every term
6 class hours/week

Introduces techniques and resources required to design industrial tools. Covers design of jigs and fixtures, and print reading for tool designers, CAD techniques, purchased components, and clamping work pieces. Recommended: CDT-105 or equivalent experience.

CDT-296 Tool Design II

1-3 credits, not offered every term
6 class hours/week

Advanced tool design techniques emphasizing the design of tools and fixtures, complex fixturing problems and correct detailing techniques. Complete tool design projects using AutoCAD. Recommended: CDT-295.

CH**Chemistry****CH-104 Introductory Chemistry**

5 credits, Fall/Winter/Spring/Summer
7 class-lab hours/week

Transfer sequence for students in nursing, allied health fields, and liberal arts. Observation, measurement, composition, stoichiometry, atomic structure, periodic table, bonding, and nomenclature. Meets science requirement for the AAOT degree. Also offered as an online + lab course. Prerequisite: Pass MTH-065.

CH-105 Introductory Chemistry

5 credits, Winter/Spring/Summer
7 class-lab hours/week

Heat; molecular and ionic interactions in solids, liquids, gases, and solutions; chemical reactions including acid-base, electron transfer, and equilibrium. Meets the science requirement for the AAOT. Also offered as an online + lab course. Prerequisite: Pass CH-104.

CH-106 Introductory Chemistry

5 credits, Fall/Spring/Summer
7 class-lab hours/week

Organic and biochemistry. Meets the science requirement for the AAOT degree. Also offered as an online + lab course. Prerequisite: Pass CH-105.

CH-150 Preparation for Chemistry

4 credits, Fall
4 class hours/week

One term preparatory course for students who must take the general chemistry sequence (CH-221/222/223) but have no chemistry background. Corequisite: MTH-095.

CH-221 General Chemistry

5 credits, Fall/Winter
4 class, 3 lab hours/week

Transfer course for science, engineering, and professional majors. The nature of chemistry, atomic theory, electron configuration, structure, bonding, properties, composition and nomenclature of covalent and ionic substances. Introduces organic chemistry and biochemistry topics. Meets the science requirement for the AAOT degree. Prerequisites: A year of high school chemistry or pass CH-150 or pass CH-104 & CH-105; & pass MTH-095.

CH-222 General Chemistry

5 credits, Winter/Spring
4 class, 3 lab hours/week

Reactions, stoichiometry, thermodynamics, organic compounds and polymers, kinetics, and equilibrium. Topics involving organic chemistry and biochemistry are introduced. Meets the science requirement for the AAOT degree. Prerequisite: Pass CH-221.

CH-223 General Chemistry

5 credits, Spring/Summer
4 class, 3 lab hours/week

States of matter, solutions, acids and bases, electrochemistry, nuclear chemistry, and spectroscopy. Topics involving organic chemistry and biochemistry are introduced. Meets the science requirement for the AAOT degree. Prerequisite: Pass CH-222.

CH-241 Organic Chemistry

4 credits, Fall
3 class, 3 lab hours/week

First term of a transfer sequence meeting the organic chemistry requirement for premedical, dental, veterinary, pharmacy, chiropractic medicine, chemical engineering, and biology majors. Meets the science requirement for the AAOT degree. Prerequisite: Pass CH-223.

CH-242 Organic Chemistry

4 credits, Winter
3 class, 3 lab hours/week

Second term of a transfer sequence meeting organic chemistry requirement for premedical, dental, veterinary, pharmacy, chiropractic medicine, chemical engineering, and biology majors. Meets the science requirement for the AAOT degree. Prerequisite: Pass CH-241.

CH-243 Organic Chemistry

4 credits, Spring
3 class, 3 lab hours/week

Third term of a transfer sequence meeting organic chemistry requirement for premedical, dental, veterinary, pharmacy, chiropractic medicine, chemical engineering, and biology majors. Meets the science requirement for the AAOT degree. Prerequisite: Pass CH-242.

CIV

Courses with this prefix will not transfer with credit to a four-year institution. Courses are intended for ESL students.

Citizenship**CIV-007 Citizenship Preparation**

0 credit, not offered every term
1 class, 2 lab hours/week

Prepares students to pass the oral exam for U.S. citizenship. Students study U.S. history, government, citizens' rights and responsibilities, and U.S. symbols independently or in small groups, taking quizzes after completing separate modules. Required: Instructor consent.

CJA**Criminal Justice****CJA-101 Criminology**

3 credits, Spring
3 class hours/week

Discusses the nature and control of crime and delinquency. Examines criminal behaviors, legal aspects of crime control and treatment processes. Socio-psychological study of crime from the criminal point of view. May be offered online.

CJA-110 Introduction to Law Enforcement
3 credits, Fall

3 class hours/week

Explores theories, philosophies, and concepts of U.S. criminal justice administration. Examines past, present and future operations of criminal justice including unique vocabulary used within the system. Studies interrelated components of the U.S. criminal justice system. May be offered online.

CJA-112 Patrol Procedures
3 credits, Fall

3 class hours/week

Describes the nature and purpose of patrol activities for the law enforcement officer. Includes routine and emergency procedures and types of patrols.

CJA-120 Judicial Process
3 credits, Winter

3 class hours/week

Studies the judicial and social processes from arrest through appeal including jurisdiction of state and federal courts. May be offered online.

CJA-122 Criminal Law
3 credits, Fall

3 class hours/week

Examines the elements, purpose and functions of criminal, traffic, juvenile and liquor laws. May be offered online.

CJA-130 Introduction to Corrections
3 credits, Fall/Winter

3 class hours/week

Examines the history, organization, and development of correctional institutions. Includes detention facilities and treatment processes such as sentencing, incarceration, probation and parole. May be offered online.

CJA-134 Correctional Institutions
3 credits, Winter

3 class hours/week

Analyzes prisons, jail and other correctional institutions. Discusses punishment history/rationale. Identifies functions of custodial staff and describes institutional procedures: reception, classification, program assignment, release. Studies prisons management system and examines juvenile facilities. May be offered online.

CJA-137 Mass Murders/Serial Killers
3 credits, not offered every term

3 class hours/week

Exploration into mass murders and serial killings, and the impact each has on society and individual victims. Examines issues of causation and the social environmental linkage of recent and notorious cases including the mind set of offenders.

CJA-138 Terrorism/Impact/Strategies
3 credits, not offered every term

3 class hours/week

Examines domestic/ international threat of terrorism and basic security issues facing law enforcement today including information and discussion on historical social causes of terrorism.

CJA-140 Introduction to Crime Analysis (CA)

1 credit, Fall/Winter/Spring/Summer

1 class hour/week

Examines history and development of Crime Analysis in the field of criminal justice. Identifies three categories of Crime Analysis; four functions within each category; the tasks and products associated with each category.

CJA-141 Introduction to Crime Mapping
1 credit, Fall/Winter/Spring/Summer

1 class hour/week

Examines evolution of crime mapping in law enforcement. Describes basic uses: tactical, strategic, and administrative crime analysis. Includes: pin map, grid mapping, GIS for crime analysis, geocoding for Law Enforcement. Prerequisite: CJA 140

CJA-142 Statistics for Crime Analysis

1 credit, Fall/Winter/Spring/Summer

1 class hour/week

Introduces mathematical/statistical tools needed for simple crime analysis through statistics. Prerequisite: CJA-140

CJA-143 Crime Analysis (CA) and Statistical Analysis

1 credit, Fall/Winter/Spring/Summer

1 class hour/week

Explores statistical tools application in CA and demonstrates use in: Tactical, Strategic, and Administrative CA. using case-study method. Prerequisite: CJA-140, CJA-142.

CJA-144 Crime Analysis(CA) via Modus Operandi (MO)

1 credit, Fall/Winter/Spring/Summer

1 class hour/week

Examines tactical CA through MO analysis, characteristics to identify factors for crime types/classifications to provide solvability factors and suspect identification. Prerequisite: CJA-140.

CJA-145 Crime Analysis (CA) Capstone
1 credit, Fall/Winter/Spring/Summer

1 class hour/week

Final course of basic CA series. Case - study methodology used to formulate real decisions, use of proper application of statistical and mapping tools, including modus operandi analysis. Prerequisite: CJA-140, CJA-142, CJA-144.

CJA-146 Crime Analysis (CA)/Link Analysis

1 credit, Fall/Winter/Spring/Summer

1 class hour/week

Examines tactical CA through LA and other forms of graphic analysis. Presents development of the graphic analytical techniques of link analysis, flow chart analysis, and telephone toll analysis. Prerequisite: CJA-140, CJA-144.

CJA-147 Profiling Violent Crimes

1 credit, Fall/Winter/Spring/Summer

1 class hour/week

Examines: psychological profiling history: arson, murder, rape, pedophilia, terrorism. and misuses, such as racial profiling. Prerequisite: CJA-140.

CJA-148 Crime Scene Analysis Profiling
1 credit, Fall/Winter/Spring/Summer

1 class hour/week

Provides case-study methodology using rape and serial murder psychological profiling examples. Prerequisite: CJA-140, CJA-147.

CJA-149 Research Methods/Crime Analysis

1 credit, Fall/Winter/Spring/Summer

1 class hour/week

Examines statistical information needed for research of administrative crime analysis. Demonstrates survey methodology for measuring crime and its impact. Prerequisite: CJA-140, CJA-142, CJA-143.

CJA-150 Introduction to Police Intelligence

1 credit, Fall/Winter/Spring/Summer
1 class hour/week

Examines the basic police intelligence mission. Demonstrates five-step intelligence process, illustrates differences between tactical (investigative unit) intelligence, strategic intelligence, and operational intelligence. Discusses legal limitations to intelligence information gathering. Prerequisite: CJA-140.

CJA-151 Crime Intelligence Analysis (CIA) Capstone

1 credit, Fall/Winter/Spring/Summer
1 class hour/week

Discusses legal limitations to intelligence information gathering: basic police intelligence mission, five-step intelligence process, illustrates differences between tactical (investigative unit) intelligence, strategic intelligence, and operational intelligence. Prerequisite: CJA-140, CJA-150.

CJA-152 Crime Scene Analysis (CSA) Capstone

1 credit, Fall/Winter/Spring/Summer
1 class hour/week

Final course of CSA series uses case-study methodology to examine a crime scene and formulate real decisions using proper application of analytical tools. Prerequisite: CJA-140, CJA-148, CJA-149.

CJA-153 Crime Intelligence Analysis (CIA) Capstone

1 credit, Fall/Winter/Spring/Summer
1 class hour/week

Final part of CIA series. Students demonstrate: threat assessments, threat summaries, threat estimates, CIA reports, recommendations, and supporting documentation, such as link analysis tools. Prerequisite: CJA-140, CJA-146, CJA-150, CJA-151.

CJA-200 Community Relations & Policing

3 credits, Fall
3 class hours/week

Examines the interrelationships and role expectations of agencies and public policy. Explores racial community tension, minority group crime, social forces, community policing and police image. May be offered online.

CJA-201 Juvenile Delinquency

3 credits, Winter/Spring
3 class hours/week

Surveys the nature and extent of delinquent behavior. Explores causes, legal apprehension, controls and treatment. May be offered online.

CJA-203 Crisis Intervention

3 credits, Spring
3 class hours/week

Examines crisis intervention as it applies to emergency service workers. Includes psychodynamics of family crisis; alcohol/drug related problems; suicide; sexual assault victims; domestic violence; mentally disturbed individuals; neglected, battered, abused children.

CJA-210 Criminal Investigation I

3 credits, Fall
3 class hours/week

Introduces the history, theory, and principles of criminal investigation in the justice system. Describes crime scene investigation and courtroom aspects of crime scenes including interviews, evidence, surveillance, follow-up, case preparation, and techniques for specific crimes.

CJA-211 Criminal Investigation II

3 credits, Winter
3 class hours/week

Continues the study and application of investigative techniques for specific offenses. Identifies similarities, differences, and elements of proof needed under state statutes. Prerequisite: CJA-210.

CJA-212 Criminal Investigation III

3 credits, Spring
3 class hours/week

As the third and final part of the Criminal Investigation series, this course allows for practical application of techniques described in CJA-210 & CJA-211 Criminal Investigation I & II. Course will include investigative techniques from a practical aspect, with some "hands-on" experimentation, including fingerprinting, photography, diagramming, and reconstruction. Prerequisite: CJA-211.

CJA-213 Interview & Interrogation

3 credits, Winter
3 class hours/week

Examines the dynamics of psychology in criminal interrogation and legal limitations. Includes behavior observation and interpretation, and the use of structured questions to acquire truthful responses.

CJA-220 Substantive Law

3 credits, Winter
3 class hours/week

Studies historical development, philosophy of law, and constitutional provisions. Examines the definition and classification of crime, application to administration of justice, legal research, study of case law, methodology, and concepts of law as a social force.

CJA-222 Procedural Law

3 credits, Spring
3 class hours/week

Discusses the constitutional and statutory provisions related to arrest, search and seizure. Includes use of deadly force, admissions, interrogations, plain view limitations, law of stop and frisk, and officer testimony.

CJA-223 Criminal Justice Ethics

3 credits, Fall
3 class hours/week

Introduces ethical issues, questions/challenges facing policing/corrections professionals. Emphasizes recognition of ethical issues and personal/professional skills in decision making and consequences of unethical conduct, and the Law Enforcement code of Ethics.

CJA-230 Juvenile Corrections

3 credits, Spring
3 class hours/week

Studies historical and contemporary perspectives on juvenile offenders, juvenile code, juvenile court and procedures. Describes treatment programs and the differences between adult and juvenile court laws and procedures.

CJA-232 Corrections Casework

3 credits, Fall
3 class hours/week

Describes interviewing and counseling techniques used by corrections officers in one-on-one contacts with clients. Stresses positive relationships and behavior modification related to the reintegration process.

CJA-240 Cultural Diversity/Law Enforcement

3 credits, Spring
3 class hours/week

Provides information and guidelines on how law enforcement professionals can work effectively with diverse cultural groups, both inside their organizations as well as in the community. Explores racial profiling, hate crimes, community based policing, undocumented immigrants, and alternative lifestyles in law enforcement.

CJA-243 Narcotics & Dangerous Drugs

3 credits, Winter
3 class hours/week

Introduces the societal problems of drug abuse (alcohol, drugs, narcotics). Includes identification of drugs and causes of addiction. Examines investigative techniques, i.e. undercover, sting, and use of informants.

To reach any college office, call 503-657-6958 and dial the extension you want. (Hearing-impaired TTY/TDD 503-650-6649)

CJA-280 Criminal Justice/Corrections/CWE
2-6 credits

Fall/Winter/Spring/Summer

1.5 class hours, 6-18 lab hours/week

Identifies employment opportunities in the criminal justice or corrections systems. Students must be enrolled full-time in the criminal justice or corrections program. Required: CWE online seminar. Required: Course-associated practicum.

CJA-281 Criminal Justice/Corrections/CWE
2-6 credits

Fall/Winter/Spring/Summer

1.5 class hours, 6-18 lab hours/week

Identifies employment opportunities in the criminal justice or corrections systems. Students must be enrolled full-time in the criminal justice or corrections program. Required: CWE online seminar. Required: Course-associated practicum.

CLA

Courses with this prefix may not transfer with credit to a four-year institution unless applied as part of the 12 allowable professional technical credits for the AAOT or ASOT-Business.

Clinical Laboratory Assistant**CLA-100 Introduction to Health Care**

2 credits, Fall

2 class hours/week

Introduction to healthcare systems and trends, ethical and legal responsibilities, personal and workplace safety, infection control, professionalism, life-long learning, and communication.

CLA-101 Clinical Laboratory Assistant**Skills I**

4 credits, Fall

3 class hours, 3 lab hours/week

Includes state and federal regulations, quality assurance practices, laboratory terminology, staffing, and a basic understanding of quality laboratory testing in the clinical laboratory. Restricted to Clinical Laboratory Assistant students. Corequisite: BI-055.

CLA-102 Clinical Laboratory Assistant
Skills II

4 credits, Winter

3 class hours, 3 lab hours/week

Addresses hematology and urinalysis. Students will be required to perform various waived tests and demonstrate an understanding of the necessity of accuracy and attention to detail. Restricted to Clinical Laboratory Assistant students. Prerequisite: Pass CLA-101.

CLA-103 Clinical Laboratory Assistant
Skills III

4 credits, Spring

3 class hours, 3 lab hours/week

Continuation of CLA-102. Focuses on clinical chemistry, immunology, and microbiology. Restricted to Clinical Laboratory Assistant students. Prerequisite: Pass CLA-102.

CLA-115 Laboratory Administrative Skills
2 credits, Winter

2 class hours/week

Designed for the Clinical Laboratory Assistant students employed in the ambulatory care setting. Laboratory billing, administrative duties, vital signs, and EKG techniques will be discussed. Restricted to Clinical Laboratory Assistant students.

CLA-119 Phlebotomy/Laboratory/Practicum I

2 credits, Winter

6 class, 66 clinical hours/term

Supervised assignment to area medical center laboratories to gain practical experience. May not be challenged. Restricted to Clinical Laboratory Assistant students who have completed the first term requirements.

CLA-120 Phlebotomy/Laboratory/Practicum II

4 credits, Spring

2 class, 8 clinical hours/week

Supervised assignment to the ambulatory care centers to gain practical experience. May not be challenged. Restricted to Clinical Laboratory Assistant students who have completed the first and second term requirements.

CPL**Credit for Prior Learning****CPL-120 Credit for Prior Learning**

3 credits, Fall/Winter/Spring/Summer

3 class hours/week

Students are guided through the process of requesting college credit for learning acquired through work experience, volunteer work, industry training, etc. Develop a portfolio correlating non-traditional learning experiences with related courses at Clackamas Community College and also prepare a resumé for credit. Prerequisite: college placement tests. Required: Instructor consent.

CS**Computer Science****CS-090 Computers for New Users [C]**

2 credits, Fall/Winter/Spring/Summer

20 class hours/5 weeks

or 20 class hours/10 weeks

For those with no computer experience. Includes using a keyboard and mouse, making commands in Windows programs, using computer programs to accomplish a task, use of a word processor, e-mail, and the Internet. Takes place in the computer lab, one student to a computer. Meets computer literacy requirement.

CS-091 Computers for New Users II [C]

2 credits, Fall/Winter/Spring/Summer

20 class hours/5 weeks

or 20 class hours/10 weeks

Follow-up of CS-090. More work with applications, including word processing, spreadsheet, and web searches. Windows file management. Takes place in the computer lab, one student to a computer. Meets computer literacy requirement. Prerequisite: Pass CS-090 or equivalent experience.

CS-092S Computers for New Users, Spanish
3 credits, not offered every year
3 class hours/week

Este es un curso en Español. Para aquellas personas sin experiencia alguna en computación. Incluye el uso del ratón, la administración de archivos en programas de Windows, la creación de una hoja de trabajo, cómo enviar y recibir e-mail, y cómo navegar en el Internet. Taught in Spanish. Requires no computer experience. Includes using a keyboard and mouse, introduction to Windows, managing files in Windows programs, using Office 2000 applications, e-mail, and using the Internet. Takes place in the computer lab, one student per computer.

CS-093S Computers for New Users II, Spanish
3 credits, not offered every year
3 class hours/week

Clase en español para aquellos que ya tomaron la clase CS 092S. Creará, modificará, dará formato e imprimirá una hoja de cálculo sencilla, tablas, consultas, formularios e informes en Access y presentaciones en PowerPoint. Taught in Spanish. For those who have taken CS-092S. Create, modify, format, and print simple worksheets in Excel, tables, queries, and reports in Access, and basic presentations in PowerPoint. Prerequisite: Pass CS-092S.

CS-120 Survey of Computing [C]
4 credits, Fall/Winter/Spring/Summer
4 class hours/week

A survey course to familiarize students with computers, computer terminology, how a computer works, and the computer's effect on society using: Word processing, spreadsheet, database management, graphics, e-mail, Internet, Windows, presentation graphics, and file management. Meets computer literacy requirement. Offered as an online course. Prerequisites: Pass CS-090 or equivalent experience & pass WR-095.

CS-121 Computer Applications [C]
3 credits, Fall/Winter/Spring/Summer
3 class hours/week

Continuation of CS-120. Hands-on approach to word processing, database management, electronic spreadsheets and graphics. Uses Word, Excel, and Access. Meets computer literacy requirement. Also offered as an online course. Prerequisites: Pass CS-120 & pass MTH-060.

CS-125H HTML & Web Site Design
3 credits, Fall/Winter/Spring
3 class hours/week

Hands-on approach to planning, design, development, and maintenance of published web sites primarily using HTML tags in a text editor. Includes basic page structure, hyperlinks, images, tables, frames, styles, and limited scripting. Brief introduction to page editors. Also offered as an online course. Recommended: Pass CS-121.

CS-125P Computer Publishing
3 credits, Winter
3 class hours/week

Desktop publishing using MS Publisher: modifying and publishing professional documents. Presentation software using MS PowerPoint: creating, modifying, and publishing presentation slide shows. Multimedia presentation using MS Producer. Web page creation using MS FrontPage: creating, modifying, and publishing of HTML documents.

CS-133S Web Application Development I
3 credits, Fall
3 class hours/week

Design, programming, and testing of scripted web pages and server submittal using JavaScript, ASP, and PHP Introduction to server-side programming and fundamental concepts of interactive web pages, program control statements (sequence, conditional statements, repetition), variables, scope, and functions. Also offered as an online course. Prerequisites: Pass CS-125H; pass MTH-065 or pass MTH-092.

CS-133VA Visual Basic for Applications
3 credits, Spring
3 class hours/week

Distance Learning: Online. Using Visual Basic for Applications to develop advanced application features for MS Word, Excel, Access, and PowerPoint. Topics will cover VB editor, objects, properties, variables, repeating statements, debugging codes, and integrating applications. Prerequisite: Pass CS-121 or pass BA-131.

CS-133VB Visual Basic.Net I
3 credits, Fall/Winter/Spring
3 class hours/week

Hands-on approach to software design using object-oriented programming. Planning an application, building a user interface, using variables and constants, calculating, accumulating, counting, making decisions, using functions, using menus. Prerequisites: Pass BA-131 or pass CS-121 & pass MTH-065.

CS-135DB Advanced Database
3 credits, Fall
3 class hours/week

Using MS Access for design, construction, and documentation of a database management system. Designing reports, customizing forms, advanced form techniques, OLE fields, changing and customizing tables, creating and using macros, creating and using an application system. Also offered as an online course. Recommended: Pass CS-121 & pass MTH-065.

CS-135I Advanced Internet Applications
3 credits, Fall/Spring
3 class hours/week

Plan and publish standards-based, accessible web sites by exploring a variety of software tools, including Macromedia Dreamweaver and Fireworks. Utilize existing scripts, audio, video, CSS, and other emerging technologies. Emphasis on professional design techniques. Also offered as an online course. Prerequisite: Pass CS-125H.

CS-135S Advanced Spreadsheet
3 credits, Spring
3 class hours/week

Using MS Excel for design, construction, and documentation of advanced spreadsheets. Templates, multiple worksheets, complex formulas, advanced chart features, Visual Basic macros, sorting, database capabilities. Also offered as an online course. Recommended: Pass CS-121 & pass MTH-065.

CS-135W Advanced Word Processing
3 credits, Winter
3 class hours/week

Using MS Word for advanced word processing features: tables, merging form letters and data source files, desktop publishing, large document capabilities (including master documents and indexes), and linking and embedding objects in a document. Also offered as an online course. Recommended: Pass CS-121.

CS-140 Operating Systems I

4 credits, Fall
4 class hours/week

Introduction to the theory behind operating systems as well as basic functions of Windows, UNIX, and Macintosh operating systems. Discussion of operating system interface with input, output, and storage devices and basic network theory. Prerequisites: Pass CS-120, pass MTH-065 & pass WR-095.

CS-140D Operating Systems I: Command Line

3 credits, Winter
3 class hours/week

In-depth study of the Windows command line environment and related syntax. Complete problem-solving exercises using the command line environment with an emphasis on batch files. Command line networking is introduced. Also offered as an online course. Prerequisites: Pass CS-140 & pass MTH-065.

CS-140U Operating Systems I: Linux/Unix

3 credits, Fall
3 class hours/week

Computer operating systems concepts using Linux/Unix. General operating system concepts, file management, network utilities, text editing, shell environment configuration, Linux installation. Also offered as an online course. Prerequisite: Pass CS-140.

CS-160 Computer Technician Orientation

2 credits, Fall
2 class hours/week

Introduction to computing topics such as computer architecture, data representation, problem solving, programming, and networking. Also covers careers in Information Technology and techniques for securing employment. Prerequisites: Pass CS-120 & pass WR-095.

CS-161 Computer Science I [C]

4 credits, Fall
4 class hours/week

Disciplined approach to algorithm development, problem-solving methods, program design, data types, control structures, subprograms. Uses C++. Meets computer literacy requirement. Prerequisites: Pass CS-120; pass MTH-111 or 4 years high school math.

CS-162 Computer Science II

4 credits, Winter
4 class hours/week

Effective methods of designing large programs. Elementary and dynamic data structures, data abstraction, object oriented programming, program correctness, verification, testing. Requires a substantial project. Prerequisite: Pass CS-161.

CS-178 Introduction to the Internet/World Wide Web

3 credits, Spring
3 class hours/term

Distance Learning: Online. Introductory course on the use and history of the Internet. Explore the philosophy of the Internet, use tools for research, communication, and entertainment. Develop and publish a simple web page. Recommended: Pass CS-091 or pass CS-120.

CS-178E Internet Applications for Educators

1 credit, not offered every year
12 class hours/term

A look at the Internet and its implications for educators. Using the Internet in the classroom to find current information, online resources for lesson plans, web-based projects, and interactive content that engages all types of learners. Prerequisite: Computer experience.

CS-179 Data Communications Concepts

3 credits, Winter
3 class hours/week

Overview of the basic concepts in computer telecommunications. Hardware, software, connectivity, and protocols involved including local area networks, wide area networks, Internet, and the convergence of computer, telephone, TV, and cable technologies. Also offered as an online course. Prerequisites: Pass CS-120, pass MTH-092 & pass WR-095.

CS-195 Website Technologies I

3 credits, Winter
3 class hours/week

Working with and exploring emerging multimedia technologies on the web today. Emphasis on interactive multimedia created with Macromedia Flash, also includes capturing multimedia elements through scanning, stylus and tablet, digital photography, and digital video recording. Also offered as an online course. Prerequisite: Pass CS-135I.

CS-225 Computer End User Support

3 credits, Fall
3 class, 1 lab hours/week

Addresses professional and interpersonal skills needed by technicians who support and manage hardware and software information systems. Customer service, troubleshooting, help desk operation; product needs analysis, evaluation, purchases and installation; technical documentation and training skills. Also offered as an online course. Prerequisites: Pass CS-120 & pass WR-095.

CS-226 Applications Support

3 credits, Spring
3 class hours/week

Troubleshooting Microsoft Office applications, to enhance student understanding of typical problems and problem-solving processes. Includes Word, Excel, Internet Explorer, Outlook, Access, PowerPoint, printing issues, macro viruses, FrontPage, and Publisher. Prerequisite: Pass CS-121.

CS-227 PC Hardware & Repair I

4 credits, Winter
4 class, 2 lab hours/week

Basic operational concepts, identification, installation, and configuration of microprocessors, memory, motherboards, power supplies, floppy and hard disks, video monitors, graphics cards, serial and parallel cards, modems, printers. System teardown and inspection, hardware and software service documentation. Prerequisites: Pass CS-140 & pass MTH-065.

CS-228 PC Hardware & Repair II

4 credits, Spring
4 class, 2 lab hours/week

Continuation of CS-227. Emphasizes the use of diagnostic software tools and troubleshooting advanced problems. Technical topics on sound cards, CD-ROM, hard drives, data recovery, SCSI, and other topics. Includes building, maintaining, and upgrading a PC. Prerequisite: Pass CS-227.

CS-229 Network System Repair & Troubleshooting

4 credits, Fall
4 class, 2 lab hours/week

Continuation of CS-228. Hands-on training in building and servicing PC LANs and WANs. Includes network servers, hubs, routers, wiring closets, cabling, and other topics for peer-to-peer and client-server LANs, WANs, and the Internet. Prerequisite: Pass CS-228.

CS-233S Web Application Development II
3 credits, Winter
3 class hours/week

Exploration of server-side programming with emphasis on database-driven web site design. Uses ASP.NET to revisit general object-oriented programming constructs, create database connectivity, and create highly interactive web sites. Application of XML concepts and database techniques are discussed. Prerequisites: Pass CS-133S; or pass CS-125H & pass CS-133VB; or pass CS-125H & pass CS-161.

CS-233VB Visual Basic.Net II
3 credits, not offered every year
3 class hours/week

Continuation of CS-133VB. Creating object-oriented programs. List boxes, combo boxes, printing, saving data and objects in files, arrays, accessing database files. Prerequisite: Pass CS-133VB.

CS-234S Web Application Development III
3 credits, Spring
3 class hours/week

Use PHP and MySQL to develop dynamic Web sites for use on the Internet or Intranet. Develop web sites from simple online order forms to complex secure e-commerce sites. Web database building, connectivity, maintenance, and security. Prerequisites: Pass CS-133S; or pass CS-125H & pass CS-133VB; or pass CS-125H & pass CS-161.

CS-240U Operating Systems II: Linux/Unix
3 credits, Winter
3 class, 1 lab hour/week

Hands-on system administration of Linux/Unix. Installation, system configuration, user and group account management, disk formatting and partitioning, local file systems, system startup and shutdown, run levels, backup and restore, printers and printing, basic local area networking, memory management. Prerequisite: Pass CS-140U.

CS-240W Operating Systems II: Windows
3 credits, Winter
3 class hours/week

An introduction to the current Windows client operating system and administration of the current Windows server operating system. Specific topics include: managing users and groups, disks and file systems, and printing; group policies, monitoring server performance, and security basics. Prerequisite: Pass CS-140.

CS-260 Data Structures
4 credits, Spring
4 class hours/week

Continuation of CS 162. Includes linear, linked lists, trees, abstract data types, searching and sorting algorithms, and their analysis. Prerequisite: Pass CS-162.

CS-275 Database Design
3 credits, Winter
3 class hours/week

Focuses on design of a relational database management system (RDMS). Database theory, entity-relationships, referential integrity, use of SQL for data manipulation, and database security. Uses MS Access, MS SQL Server, MySQL and Oracle. Prerequisite: Pass CS-135DB.

CS-279N LAN I: Novell Administration
4 credits, Winter
4 class, 2 lab hours/week

Hands-on, in-depth look at Novell software with an emphasis on system administration. Topology, protocols, cable types. Design, configuration, security issues, performance issues, troubleshooting of the Novell network operating system. Prerequisites: Pass CS-140 & pass CS-179.

CS-279W LAN I: Windows Server Administration
4 credits, Spring
4 class, 2 lab hours/week

Managing a Microsoft Windows server network. Topics include: Network protocols, Active Directory, performance issues, managing web resources, security, and disaster recovery. Prerequisites: Pass CS-179 & pass CS-240W.

CS-280 Computer Science/CWE
3-6 credits

Fall/Winter/Spring/Summer
1.5 class, 9-18 job site hours/week

Cooperative work experience. Provides a supervised work experience to supplement the school experience from the academic classroom environment. User support, work with computer applications or programming languages, install or manage PC computer systems, and website development. Required: Instructor consent & a CWE seminar. Prerequisites: Pass CS-121, pass CS-140 & pass CS-160.

CS-284 Network Security
3 credits, Spring
3 class, 1 lab hour/week

Comprehensive overview of network security. Covers communication security, infrastructure security, cryptography, operations/organizational security, disaster recovery, business continuity, and computer forensics. Prerequisite: Pass CS-279W.

CS-287X Microsoft Exchange Server
2 credits, Winter
2 class, 1 lab hours/week

Introduction to installation, administration, and troubleshooting Exchange Server. Topics include Internet mail protocols, Exchange Server architecture, installation, management, and security. Prerequisite: Pass CS-279W or network administration experience.

CS-288W LAN II: TCP/IP
4 credits, Fall
6 class-lab hours/week

Issues involved with interconnecting multiple LANs to form an internetwork using Windows. Emphasis on TCP/IP protocols including DHCP, DNS, ARP, IPsec and routing protocols. Also covered are connections to the Internet, web servers, and security issues. Hands-on experience with hardware and software. Prerequisite: Pass CS-279W.

CS-289A Web Server Administration: Apache Web Server
2 credits, Spring
2 class, 1 lab hour/week

Introduction to Apache Web Server. Covers installing, administering, securing, and troubleshooting Apache Web Server running on Linux. Additional topics include http, https, ftp protocols, and FrontPage extensions. Prerequisite: Pass CS-240U.

CS-289I Web Server Administration: Internet Information Server
2 credits, Winter
2 class, 1 lab hour/week

An introduction to Microsoft Internet Information Server (IIS) running on Windows Server. Covers installation, administration, security, and troubleshooting IIS. Additional topics include http, https, ftp protocols, and FrontPage extensions. Prerequisite: Pass CS-240W or network administration experience.

CS-295 Website Technologies II

3 credits, Spring
3 class hours/week

Continuation of CS-195, culminating in a portfolio. Students submit a project proposal to be admitted. Project involves web design, client-side, and/or server-side applications, demonstration of digital imaging, streaming media, multimedia concepts. Prerequisite: Pass CS-195 or instructor consent.

CS-295E FrontPage & Web Design for Educators

1 credit, not offered every year
12 class hours/term

Provides the educator with a hands-on opportunity to design and develop web pages using FrontPage, a web page editor. Each student will complete and present an individual web site. Takes place in the computer lab, one student to a computer. Prerequisite: Internet experience.

CW

Courses with this prefix will not transfer with credit to a four-year institution.

Computer Science Workshops & Short Courses

CW-050 Introduction to Windows

Fall/Winter/Spring/Summer
12 class hours

A nuts-and-bolts workshop for those who have little or no experience with computers. It (or equivalent experience) serves as a prerequisite for most other workshops.

CW-052 Electronic Spreadsheets

Fall/Winter/Spring/Summer
12 class hours

Includes Levels I, II and III of MS-Excel 2003.

CW-053 Web Design

Not offered every term
12 class hours

Workshops offered include Levels I & II of FrontPage 2003.

CW-054 Word Processing

Fall/Winter/Spring
12 class hours

Workshops include Levels I, II, and III of MS-Word 2003.

CW-055 Software Applications

Not offered every term.
12 class hours

Workshops include Levels I, II, and III of MS-Powerpoint 2003.

CW-056 Database Applications

Fall/Winter/Spring/Summer
12 class hours

Workshops offered include Levels I, II, and III of MS-Access 2003.

CWE

Courses with this prefix may not transfer with credit to a four-year institution unless applied as part of the 12 allowable professional technical credits for the AAOT or ASOT-Business.

Cooperative Work Experience

CWE-010 Pre-Cooperative Work Experience

2-6 credits
Fall/Winter/Spring/Summer
6-18 lab hours/week

For students who are undecided on a major. Opportunity for career exploration.

CWE-281 Cooperative Work Experience Seminar I

Fall/Winter/Spring/Summer
1.5 class hours/week

Prepares students for career success. Uses on-the-job learning experience and case studies to stimulate decision making and discussion. Corequisite for program specific CWE courses.

CWE-282 Cooperative Work Experience Seminar II

Fall/Winter/Spring/Summer
1.5 class hours/week

Emphasis on job-related situations and experiences. Case problems introduced to stimulate decision making and discussion. Special projects. Prerequisite: CWE-281. Corequisite for program specific CWE courses.

CWE-283 Cooperative Work Experience Seminar III

Fall/Winter/Spring/Summer
1.5 class hours/week

Includes organizing and presenting a career related project to the seminar group. Prerequisite: CWE-282. Corequisite for program specific CWE courses.

CWE-284 Cooperative Work Experience Seminar IV

Fall/Winter/Spring/Summer
1.5 class hours/week

Applicable in a limited number of programs. Corequisite for program specific CWE courses.

Professional/Technical Cooperative Work Experience Classes:

Accounting	BA-280
Accounting Clerk	BA-280
Auto Mechanics	AM-280/281
Business Technology	BA-280
Building Construction	BC-180/280
Collision Repair	AB-280
Collision Repair Refinishing ..	ABR-180
Computer Science	CS-280
Criminal Justice	CJA-280/281
Corrections, Juvenile Corrections	
Drafting	CDT-280
Early Childhood Education ...	ECE-280
Electronic & Microelectronics .	SM-280
Employment Skills Training	EST-180
Environmental Education	ED-280
Fire Science/Wildland	FRP-180/280
Geographic Information	GIS-280
Systems	
Gerontology	HS-280
Health	HE-280
Horticulture	HOR-280/281/282
Human Services Generalist	HS-280
Instructional Assistant	ED-280
Manufacturing	MFG-280
Marketing	BA-280
Office Assistant	BA-280
Occupational Skills Training ..	OST-180
Tutor	ED-280
Welding	WLD-280

Transfer Program Cooperative Work Experience Classes:

Anthropology	ANT-280
Art	ART-280
Business Administration	BA-280
Biology	BI-280
Criminal Justice	CJA-280/281
/Corrections	
Education	ED-280
English	ENG-280
Geology	G-280
Geography	GEO-280
Health	HE-280
History	HST-280
Journalism/Public Relations	J-280
Mathematics	MTH-280
Music	MUS-280
Physical Education	PE-280
Physics	PH-280

Political Science	PS-280
Psychology	PSY-280
Religion	R-280
Sociology	SOC-280
Speech	SP-280
Spanish	SPN-280
Theatre Arts	TA-280

DA

Courses with this prefix may not transfer with credit to a four-year institution unless applied as part of the 12 allowable professional technical credits for the AAOT or ASOT-Business.

Dental Assisting**DA-101 Dental Radiology I/Lab**
3 credits, Fall

3 class, 2 lab hours/week

Introduction to history and principles of dental radiology, terminology, legal aspects, basic physics, biological effects, x-ray equipment and infection control. Includes practical instruction in radiation health and safety, types of film & holders, processing/mounting. Restricted to Dental Assistant students.

DA-102 Dental Radiology II/Lab
1 credit, Winter

1 class, 1 lab hours/week

Prepare and review for the Dental Assisting National Board and State of Oregon Radiological Proficiency Board examination. Criteria for perfecting full mouth series x-rays. Advanced principles of radiology techniques. Restricted to Dental Assistant students. Prerequisite: Pass DA-101 with a "C" or better.

DA-104 Clinical Procedures I
3 credits, Fall

2 class, 3 lab hours/week

Introduction and practice of basic chair-side assisting and general procedures which are taught in a dental lab setting. Includes lectures and discussion of the dental professional, dental law, ethics and patient records. Restricted to Dental Assistant students.

DA-105 Clinical Procedures II/Lab

3 credits, Winter

2 class, 3 lab hours/week

Further knowledge of chair-side skills. Covers expanded function procedures. Introduces patient health education, oral hygiene instruction, fluoride treatment and plaque-related diseases, sealants and coronal polishing. Restricted to Dental Assistant students. Prerequisite: Pass DA-104 with a "C" or better.

DA-106 Clinical Procedures III/Lab

2 credits, Spring

2 class, 1 lab hour/week

Introduction to basic procedures, tray set-up and dental materials of dental specialties: pedodontic, orthodontic, periodontics, oral surgery and endodontics. Continue to perfect skills. Review all dental procedures. Introduction to bleaching material and fabrication of trays. Restricted to Dental Assistant students. Prerequisite: Pass DA-105 with a "C" or better.

DA-107 Dental Materials I/Lab

3 credits, Fall

2 class, 3 lab hours/week

Introduction to dental materials including the physical properties, composition, uses and manipulation of dental restorative materials. Includes terminology, armamentarium and procedural steps for amalgam, composite and resin restorations. Restricted to Dental Assistant students.

DA-108 Dental Materials II/Lab

2 credits, Winter

1 class, 3 lab hours/week

Introduction to fixed and removable prosthodontics, laboratory materials and techniques used in these procedures and the dental assistant's role in these procedures. Restricted to Dental Assistant students. Prerequisite: Pass DA-107 with a "C" or better.

DA-110 Clinical Practicum I

1 credit, Fall

40 clinical hours/5 weeks

The seventh week of class clinical practicum begins at an assigned clinical site. Students report to their site once a week, eight hours per day. All protocols are followed to allow for student and patient safety and protection. May not be challenged. Restricted to Dental Assistant students.

DA-115 Dental Science

1 credit, Fall

1 class hour/week

Introduction to anatomy and physiology including major body systems, head and neck anatomy, oral embryology and histology, tooth morphology, oral pathology and dental charting. Restricted to Dental Assistant students.

DA-120 Clinical Practicum II

5 credits, Winter

16 clinical hours/week

Practice and improve on clinical skills taught in both clinical procedures and radiology. Covers advanced EFDA skills. Implement infection control protocols. Ten hours of community service will be required. May not be challenged. Restricted to Dental Assistant students. Prerequisite: Pass DA-110 with a "C" or better.

DA-125 Dental Infection Control

1 credit, Fall

1 class hour/week

Introduction to microbiology, infection control, cross-contamination and hazard control. Covers OSHA standards of Hazard Communication and Bloodborne Pathogens, management of Material Safety Data Sheets and labeling hazardous materials. Prepare for Infection Control Exam. Restricted to Dental Assistant students.

DA-130 Clinical Practicum III

8 credits, Spring

24 clinical hours/week

Practice and improve advanced clinical skills in all areas of chair-side dental assisting, specialties and radiology. EFDA skills are performed to meet the requirements for certification. Students will be responsible to meet ten hours of community service. May not be challenged. Restricted to Dental Assistant students. Prerequisite: Pass DA-120 with a "C" or better.

DA-135 Pharmacology/Medical Emergencies

1 credit, Winter

1 class hour/week

Introduction to pharmacology including drug names, types of drugs, prescriptions, drug laws, drug administration routes, pain and anxiety management and management of medical emergencies. Restricted to Dental Assistant students.

DA-145 Dental Office Procedures
2 credits, Spring
2 class hours/week

A specialized study of dental business office procedures associated with desk and dental office management responsibilities. Includes employment strategies. Restricted to Dental Assistant students. Prerequisite: Pass CS-120 with a "C" or better.

EC

Economics

EC-115 Introduction to Basic Economics
4 credits, not offered every year
4 class hours/week

Surveys principles of economics, government and institutional economics and related policies, and international issues. Includes economic history, the concepts of supply and demand and opportunity costs. Meets the social science requirement for the AAOT degree. Recommended: Placement in RD-115.

EC-201 Principles of Economics: MICRO
4 credits, Fall/Winter/Spring
4 class hours/week

Focuses on micro-economic theory dealing with the behavior of individuals and individual firms. Covers concepts of competition, consumer decisions, the use price of economic resources, and international trade. Meets the social science requirement for the AAOT degree. Also offered as a telecourse. Recommended: Placement in RD-115.

EC-202 Principles of Economics: MACRO
4 credits, Fall/Winter/Spring
4 class hours/week

Introduction to economic theory, policy, and institutions. Focuses on macro-economic theory, scarcity, production, money, unemployment, inflation, and international finance. Meets the social science requirement for the AAOT degree. Also offered as a telecourse. Recommended: Placement in RD-115.

EC-215 American Economic History
4 credits, not offered every year
4 class hours/week

Studies the historical development of economic institutions in the United States. Includes industry, agriculture, transportation, labor and financial institutions. Meets the social science requirement for the AAOT degree. Recommended: Placement in RD-115.

EC-216 Introduction to Labor Economics
4 credits, not offered every year
4 class hours/week

Introduces the theory and policy of labor power economics. Explores the history of workers in America as they have been affected by political transitions, labor organizations and conflict with management. Meets the social science requirement for the AAOT degree. Recommended: Placement in RD-115.

EC-230 International Economics
4 credits, not offered every year
4 class hours/week

An exploration of international trade and finance from the era of mercantilism to contemporary times. Global issues using historic events, theoretical explanations and the methodology of economics. Meets the social science requirement for the AAOT degree. Recommended: Placement in RD-115.

ECE

Courses with this prefix may not transfer with credit to a four-year institution unless applied as part of the 12 allowable professional technical credits for the AAOT or ASOT-Business.

Early Childhood Education

ECE-150 Introduction & Observation in Early Childhood Education
3 credits, Fall
3 class hours/week

Focuses on the history of early childhood education, the value & use of objective observations as a teaching tool, how to plan & adapt your program's goals/objectives for each individual child/family. Includes systematic, weekly observations of children.

ECE-154 Children's Language & Literacy
3 credits, Winter
3 class hours/week

An overview of children's literature including availability, purpose, ways to improve its use, and appropriateness in school situations. Children's books will be read and evaluated in story groups.

ECE-175 Infant/Toddler Caregiving
1 credit, Summer
12 class hours/term

Presents skills and knowledge to manage quality care in group settings. Four modules: 1. Learning & Development; 2. Group Care; 3. Social Emotional Growth; 4. Family & Provider Relationships.

ECE-209 Theory & Practicum
3 credits, Winter
3 class hours/week

Develops leadership potential through classroom discussion/field experience at the CCC on-site child care center. Students will gain experience and become oriented to various roles and responsibilities of the early childhood care and education practitioner; work with young children in an organized setting; assist with supervision of observation/assessment and guidance techniques.

ECE-239 Helping Children & Families Cope with Stress
3 credits, Spring
3 class hours/week

Explore stressors in society that can affect children and families; the effects of stress on children and families and ways to help them cope.

ECE-240 Lesson & Curriculum Planning
3 credits, Winter
3 class hours/week

Plan daily/weekly activities for early childhood care and education programs. Includes methodologies and materials to be used in planning programs which encompass the whole child's creative learning needs: emotional, social, cognitive, and physical.

ECE-280 Early Childhood Education/CWE
3 credits, Spring
1.5 class hours/week, 9 service hours/week

Provides students with on-the-job experience in the field of early childhood education. Gain experience in various roles and responsibilities of early childhood educator/care giver while working with young children in an organized setting, observation/assessment and curriculum development. Must have completed a minimum of 9-12 credits in ECE and FS.

ED***Education***

Courses with this prefix may not transfer with credit to a four-year institution unless applied as part of the 12 allowable professional technical credits for the AAOT or ASOT-Business.

ED-100 Introduction to Education

3 credits, Fall/Winter/Spring

3 class hours/week

Examines teaching as a profession. Provides opportunities for direct experience with, and analysis of, educational settings. Explores current issues in education and characteristics of effective schools.

ED-113 Instructional Strategies in**Reading and Language Arts**

3 credits, Winter

3 class hours/week

Introduces the nature of the reading process and presents a systematic approach to language arts instruction. Students learn to link literacy instruction and assessment to state content standards.

ED-114 Instructional Strategies in Math and Science

3 credits, Spring

3 class hours/week

Introduces the development of math and science concepts and presents a systematic approach to math and science instruction. Students learn to link math and science instruction and assessment to state content standards.

ED-120 Leadership Development I

3 credits, Fall

3 class hours/week

First of a three term sequence designed to develop leadership skills. Explores classical and modern theories with practical applications. Develop a personal leadership philosophy; conceive and articulate a vision, lead with goals; use logic and creativity in decision making. May be taken in any sequence. Recommended: Placement in RD-115, WR-121

ED-121 Leadership Development II

3 credits, Winter

3 class hours/week

Second of a three term sequence designed to develop leadership skills. Explores classical and modern theories with practical applications. Continuing development of a personal leadership philosophy; time management; conducting effective meetings; empowering and delegating. May be taken in any sequence. Recommended: Placement in RD-115, WR-121.

ED-122 Leadership Development III

3 credits, Spring

3 class hours/week

Third of a three-term sequence designed to develop leadership skills. Explores classical and modern theories with practical applications. Finalizing a personal leadership philosophy; initiating change; managing conflict; leadership ethics; servant leadership. May be taken in any sequence. Recommended: Placement in RD-115, WR-121.

ED-125 Tutor Certification I

1 credit, not offered every term

10 hours/term

Covers the philosophy and ethics, tutor responsibilities, guidelines, do's and don'ts, time management, communication skills, critical thinking., Socratic Method, active listening and paraphrasing, and study skills. Required: Program Coordinator Consent.

ED-126 Tutor Certification II

1 credit, not offered every term

10 hours/term

Covers characteristics of adult learners, learning styles, cultural awareness, intercultural communications, and tutoring specific subjects. Required: Program coordinator consent.

ED-127 Tutor Certification III

1 credit, not offered every term

10 hours/term

Covers assertiveness training, tutoring target populations, supervisory and group management skills. Required: Program coordinator consent.

ED-130 Comprehensive Classroom Management

3 credits, Spring

3 class hours/week

Distance Learning: Online. Provides current theory and methodology for managing small and large groups of students so that students choose to be productively involved in instructional activities. Covers the four major factors or skill areas of effective classroom management: 1) understanding students' personal/psychological and learning needs, 2) establishing positive adult-student and student-student relationships, 3) implementing instructional methods that facilitate optimal learning, and 4) using organizational and group management methods that maximize positive student behavior and learning.

ED-131 Instructional Strategies

3 credits, Fall

3 class hours/week

Distance Learning: Online. This introductory course for educators focuses on the components of effective instruction. Students will design standards based activities that integrate multiple content areas, address the instructional needs of diverse learners and include appropriate strategies for assessment.

ED-169 Overview of Students with**Special Needs**

3 credits, Winter

3 hours/week

An introduction to the disabling conditions of students with special needs and their implications in school settings. Defines and identifies intervention strategies for disabilities covered under federal law.

ED-200 Foundations of Education

3 credits, Winter

3 class hours/week

This course provides an overview of the American Educational System, including historical, legal and philosophical foundations. Students will explore the governance of local schools and districts and will consider the roles and ethical obligations of professional educators.

ED-210 Electronic Portfolio

1 credit, not offered every term

1 hour/week

Focuses on professional portfolio development to document educational experience and expertise. Opportunity to develop a professional portfolio. Includes portfolio demonstrations.

ED-213 Advanced Instructional Techniques in Reading
3 credits, not offered every term
3 class hours/week

Prepares instructional assistants to apply a variety of instructional strategies which build upon reading foundations developed in ED-123. Compares and contrasts current instructional strategies and explores the interactive nature of language, reading, writing, and spelling. Required: Program coordinator consent.

ED-214 Advanced Instructional Techniques in Math
3 credits, not offered every term
3 class hours/week

Prepares instructional assistants. Applies instructional strategies built in ED-124. Explores manipulative mathematics; operations with rational numbers; probability; geometry; measurement; time; and money. Required: Program coordinator consent.

ED-229 Learning and Development
3 credits, Spring
3 class hours/week

This course addresses current theory regarding human development, intelligence, motivation, and the learning process. Students learn to apply strategies and techniques derived from these theories.

ED-235 Educational Technology
3 credits, Summer
3 class hours/week

This course trains students in the preparation and use of media and technology in school settings. Students will develop an understanding of the role of media in learning and methods for incorporating media in instruction.

ED-254 Instructional Strategies for English Language Learners
3 credits, Spring
3 class hours/week

This course will examine pedagogical and cultural approaches which lead to successful acquisition of English language skills and content knowledge.

ED-258 Multicultural Education
3 credits, Summer
3 class hours/week

This course covers the philosophy, activities, and techniques appropriate to a culturally sensitive classroom. Students will develop an understanding of the impact of culture on individual perception and learning and group dynamics.

ED-268 Educating Mild/Severely Disabled
3 credits, not offered every term
3 class hours/week

Introduces theory and technique for working with handicapped students. Addresses services and funding provided for mildly and severely handicapped students. Required: Program coordinator consent.

ED-280 Instructional Assistant/CWE
1-6V credits, Winter
9-18 job site hours/week

Provides instructional assistants with on-the-job experience/training related to course work and work plan. Supervision/evaluation is provided by college staff and the employing school. Required: Weekly seminar (incorporated with ED-212 Schools & Society). Required: Program coordinator consent.

ED-280 Practicum/CWE (Education)
2-6V credits, Fall/Winter/Spring/Summer

1.5 class, 6-18 job site hours/term
Supervised practicum in a school setting. Students will utilize and develop knowledge, skills and attitudes relevant to working in a school and with children. Prerequisite or co-requisite: ED-100.

EE

Electrical Engineering

EE-221 Electrical Circuit Analysis
5 credits, Spring
4 class, 3 lab hours/week

Experimental laws, network theorems, and useful computer analysis techniques of electrical circuit analysis. Recommended: Placement in RD-115 & placement in WR-121. Prerequisite: Pass MTH-252.

EET

Courses with this prefix may not transfer with credit to a four-year institution unless applied as part of the 12 allowable professional technical credits for the AAOT or ASOT-Business.

Electronics Systems Technology

Courses listed with the EET prefix are the main core classes for the Electronics Systems Technology program. Many of these classes can be customized to meet the needs of the industry. For additional information on a customized class for your company, contact the Customized Training Department at ext. 3523.

EET-112 Electronic Test Equipment & Soldering
1 credit, Fall
2 class hours/week

Provides basic understanding, operation and set-up of electronic test equipment. Students will set-up, operate, and make measurements using meters, function generator, digital storage oscilloscope & logic analyzer and solder to IPC 610A standards.

EET-127 Semiconductor Circuits I
4 credits, Spring
8 class hours/week

Introduction to the basic concepts of semiconductor devices and the fundamental principals of the device operation. Industry standard devices will be used. Prerequisite: EET-137 and MTH-065.

EET-137 DC Circuits
4 credits, Fall
8 class hours/week

Introduction to basic concepts of voltage, current, resistance and their relationships in DC circuits. Analysis of series, parallel and series-parallel circuits will be made using Ohm's & Kirchhoff's laws and DC Network theorems. Prerequisite: MTH-050

EET-139 Principles of Troubleshooting I
2 credits, Fall
4 class hours/week

Emphasizes theories and practices useful in troubleshooting failures in any application. Focuses on the overall philosophy and strategy of troubleshooting, as opposed to detailed tactics of specific applications. Includes a computer applications laboratory. Recommended: MFG-109 or MFG-209.

EET-141 Transient Analysis and Network Theorems
4 credits, Winter/Spring
8 class hours/week

Introduction to basic concepts of source conversion and current sources. Network theorems, inductors, capacitors, magnetics, and transient analysis of RC and RL circuits will also be covered. Prerequisite: EET-137.

EET-142 AC Circuits
4 credits, Spring
8 class hours/week

AC circuits analysis, peak, average, RMS, and peak-to-peak voltages in relation to AC circuits. Power, energy, frequency, and transformers are covered. Prerequisite: EET-141.

EET-157 Digital Logic I
3 credits, Winter
6 class hours/week

Introduction to digital logic principles, numbering systems & conversions and gate operations. Using principles, circuit analysis will be used to minimize logic networks. Industry standard devices will be used. Recommended: EET-137, MTH-050.

EET-215 Principles and Applications of Manufacturing Equipment Technology
2 credits, Fall
4 class hours/week

This course emphasizes applied electro-mechanical principles and motors. Covers theory, operation and application of force, work, rate, resistance, energy power and force transformers. AC and DC motors also covered. Prerequisite or co-requisite: EET-137.

EET-227 Semiconductor Circuits II
3 credits, Fall
6 class hours/week

Second in series concentrating on the application, design and circuit analysis of transistor amplifying and switching circuits. Industry standard devices will be used. Prerequisite: EET-127.

EET-230 Lasers and Fiber Optics
3 credits, Spring
3 class hours/week

This course focuses on basic theory and practice of laser and fiber optics. Students study optical fiber, optical components, testing and instrumentation, optical networks, etc. as well as general characteristics of lasers, laser excitation, semiconductor lasers, etc.

EET-239 Principles of Troubleshooting II
2 credits, Winter
4 class hours/week

Covers advanced applications of diagnosis, service, maintenance and repair of systems. Also includes preventative maintenance, applied statistical process control and RF power generation. Recommended: EET-139.

EET-250 Linear Circuits
3 credits, Winter
6 class hours/week

Introduction to the operation and functions of operational amplifiers and linear devices. Design and circuit analysis of op-amps, comparators, converters and special purpose linear devices. Industry standard devices will be used. Prerequisite: EET-137. Recommended: EET-127.

EET-252 Control Systems
3 credits, Winter
6 class hours/week

Covers basic control system and sub-systems used in the electronics industry covering programmable controllers, sensors, transducers, motion and motor control systems. Recommended: EET-157, EET-127.

EET-254 Introduction to Microcontrollers
4 credits, Winter
8 class hours/week

Introduction to Motorola 68HC12 microcontroller. Internal structure, registers, busses, control unit. Clock, machine and instruction cycling timing, interrupts and DMA. Instruction set, mnemonics, functions, and assembly language programming. Interfacing to external memory and I/O on-chip peripherals. Prerequisite: EET-157; Recommended: EET-257.

EET-257 Digital Logic II
4 credits, Spring
8 class hours/week

Bus systems and computer peripherals & systems using latches, registers, counters, and memory circuits are developed and analyzed. Prerequisite: EET-157.

EL

Study Skills

See also Reading (RD)

EL-111 College Study Skills
3 credits, Fall/Winter/Spring
3 class hours/week

Emphasizes time management, listening/ notetaking, testing skills/anxiety, library resources, learning styles, study/reading textbooks, concentration. Prerequisite: Placement in RD-090.

EMT

Courses with this prefix may not transfer with credit to a four-year institution unless applied as part of the 12 allowable professional technical credits for the AAOT or ASOT-Business.

Emergency Medical Technology

EMT-101 EMT Basic Part I
5 credits, Fall/Winter
4 class, 3 lab hours/week

Develops skills and training at the basic life support (BLS) level. Includes signs and symptoms of illness and injury, initial treatment, stabilization, and transportation. Focus on: introduction to EMS, airway management, and patient assessment. Recommended: Placement in RD-115, placement in WR-11, and placement in MTH-065. Prerequisite: AHA CPR Health Care Provider or equivalent.

EMT-102 EMT Basic Part II
5 credits, Winter/Spring
4 class, 3 lab hour/week,
16 TBA hours/term

Continuation of EMT-101. Focus on: medical and trauma emergencies, EMS operations, and special populations. Includes 16 hours of observational time in an emergency department and with an EMS unit. Prerequisite: Pass EMT-101.

EMT-105 Introduction to Emergency**Medical Services**

3 credits, Fall/Spring

3 class hours/week

Introduces the student to EMS. Examines the career path for paramedics. Explores structure and function of EMS systems. Includes roles and responsibilities, operations, medico-legal consideration, stress management, blood borne pathogens, and other Oregon specific content.

EMT-106 Emergency Communication & Patient Transportation

3 credits, Spring

3 class hours/week,

16 lab/observation hours/term

Covers EMS operational areas including: Emergency communications and radio use techniques, ambulance operation, maintenance, laws and safety, emergency response and driving techniques, route planning, communications systems, and more. Prerequisite: Pass EMT-101.

EMT-107 EMT Rescue

3 credits, Spring

3 class hours/week,

16 lab/observation hours/term

Covers EMS operational areas including: Rescue practices, standard and rapid patient extrication, introduction to heavy extrication, control of rescue operations, scene safety, and more. Prerequisite: Pass EMT-101.

EMT-116 Oregon EMT Intermediate Part I

5 credits, Fall

4 class, 3 lab hours/week

Theory and practice of the EMT Intermediate in the state of Oregon. Focus on: airway management, IV therapy, pharmacology, drug calculations. Successful completion required to sit for state certification examination. Prerequisites: Current Oregon EMT-Basic certification.

EMT-117 Oregon EMT Intermediate Part II

5 credits, Winter

4 class, 3 lab hours/week

Continuation of EMT-116. Focus on: cardiac and other medical emergencies, and trauma management. Prerequisite: Pass EMT-116.

ENG**English****ENG-104 Introduction to Literature: Fiction**

4 credits, Fall/Winter/Spring/Summer

4 class hours/week

Introduction to American and international short fiction. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121. Also offered as an online course.

ENG-105 Introduction to Literature: Drama

4 credits, Fall/Winter/Spring/Summer

4 class hours/week

Introduction to American and international drama. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

ENG-106 Introduction to Literature: Poetry

4 credits, Fall/Winter/Spring/Summer

4 class hours/week

Introduction to American and international poetry. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121. Also offered as an online course.

ENG-107 World Literature

4 credits, Fall

4 class hours/week

The Ancient World: epic, lyric, and dramatic literature with emphasis on Greek, Roman, and Hebrew works. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

ENG-108 World Literature

4 credits, Winter

4 class hours/week

The Dark Ages through the Enlightenment, emphasizing Cervantes, Dante, and Voltaire. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

ENG-109 World Literature

4 credits, Spring

4 class hours/week

The Romantics through modern times, ranging from Russia to Nigeria and Colombia. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

ENG-121 Mystery Fiction

4 credits, not offered every year

4 class hours/week

Detective fiction: mystery novels and short stories. Analysis of the different styles and fictional techniques of such writers as Poe, Doyle, Christie, Stout, Marsh, Lathen, Sayers, and Chandler. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

ENG-125 Oregon Literature

4 credits, not offered every year

4 class hours/week

Representative study of Oregon writers in fiction, poetry, and the ballad. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

ENG-195 American Film

4 credits, not offered every term

4 class hours/week

This course will focus on the history and theory of American film making from 1895 to the present. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115. Prerequisite: Placement in WR-121 or instructor consent.

ENG-201 Shakespeare

4 credits, Fall

4 class hours/week

Study of significant plays and sonnets. Selected comedies, histories and tragedies covered each term. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

ENG-202 Shakespeare

4 credits, Winter

4 class hours/week

Study of significant plays and sonnets. Selected comedies, histories, and tragedies covered each term. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

ENG-203 Shakespeare

4 credits, Spring
4 class hours/week

Study of significant plays and sonnets. Selected comedies, histories, and tragedies covered each term. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

ENG-204 Survey of English Literature

4 credits, Fall
4 class hours/week

Fourth to 17th century. Includes early legends, myths, the works of Chaucer and Shakespeare, and 17th century poems and essays. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

ENG-205 Survey of English Literature

4 credits, Winter
4 class hours/week

17th to 20th century. Includes English epic, satire, poetry, and essay; works by Milton, Blake, Swift, and others. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

ENG-206 Survey of English Literature

4 credits, Spring
4 class hours/week

Focus on selected authors and works of modern British fiction, poetry, nonfiction, and drama. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

ENG-210 Modern American Indian Literature

4 credits, not offered every year
4 class hours/week

Emphasizes contemporary fiction and poetry, including works of James Welch, Leslie Silko, and Scott Momaday. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

ENG-215 Literature of the Beat

Generation
4 credits, not offered every year
4 class hours/week

Introduction to the Literature of the Beat Generation, from 1956 to present. Examines representative works and biographical profiles of the primary figures of the movement. Explores historical and cultural roots and legacies of these writers. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in WR-121.

ENG-216 Comics and Literature

4 credits, not offered every term
4 class hours/week

This class examines the intrinsic literary and artistic qualities of the comics, as well as the literature and other art they have inspired. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115. Prerequisite: Placement in WR-121 or instructor consent.

ENG-250 Mythology

4 credits, Fall
4 class hours/week

Fundamental myths of Western culture, such as Greek, Roman, Hebrew, and Christian. Comparative analysis of the themes and structures of myths of several cultures and study of influence on the cultures that followed. Insight into the social, psychological, and aesthetic nature of mythology. Introduction to the theoretical approaches to understanding mythology. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

ENG-251 Mythology

4 credits, Winter
4 class hours/week

Continuing study of European myths, including Celtic and/or Norse. Comparative analysis of the themes and structures of myths of several cultures and study of their influence on the cultures that followed. Insight into the social, psychological and aesthetic nature of mythology. Introduction to the theoretical approaches to understanding mythology. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

ENG-252 Mythology

4 credits, Spring
4 class hours/week

Comparative analysis of the themes and structures of myths of several cultures and study of their influence on the cultures that followed. Insight into the social, psychological, and aesthetic nature of mythology. Introduction to the theoretical approaches to understanding mythology. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

ENG-253 American Literature

4 credits, Fall
4 class hours/week

Pre-Colonial to 19th century. Surveys the development of American fiction, nonfiction, poetry, and drama through the study of the works of both major and lesser known writers. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

ENG-254 American Literature

4 credits, Winter
4 class hours/week

Mid-19th century to 20th century. Surveys the development of American fiction, nonfiction, poetry, and drama through the study of the works of both major and lesser known writers. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

ENG-255 American Literature

4 credits, Spring
4 class hours/week

Focus on selected authors and works of modern American fiction, poetry, nonfiction, and drama. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

ENG-260 Introduction to Women Writers

4 credits, not offered every year
4 class hours/week

Study of women writers and women's roles in plays, poems, and fiction. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

ENG-266 The Literature of War
4 credits, not offered every year
4 class hours/week

Fiction, poetry, nonfiction, and popular song lyrics dealing with the experience of war. Writers such as Crane, Remarque, Trumbo, Heller, Vonnegut, Owen, Sassoon, and writers of the Vietnam War will be examined and discussed. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

ENG-275 The Bible As Literature
4 credits, not offered every year
4 class hours/week

Historical and literary approach to the Hebrew Bible, Apocrypha, and New Testament. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121. Also offered as an online course.

ENG-280 English/CWE
2-6 credits, Fall/Winter/Spring
1.5 class, 6-18 job site hours/week

Cooperative work experience. Provides students with on-the-job experience in the field of English studies. Required: Instructor consent & a CWE seminar.

ENL

Courses with this prefix may transfer with credit to a four-year institution. Courses are intended for PIE students.

English as a Non-Native Language

ENL-117 Advanced Grammar A
3 credits, Fall/Spring
3 class, 1 lab hours/week

Part A of a 2-part series. Presentation and practice of adverbial clauses, discourse connectors, adverb phrases, and noun clauses in written and spoken English. Required: Instructor consent. Corequisite: PIE-070.

ENL-118 Advanced Grammar B
3 credits, Winter/Summer
3 class, 1 lab hours/week

Part B of a 2-part series. Presentation and practice of count/noncount nouns, definite/indefinite articles, modals, and conditional sentences in written and spoken English. Required: Instructor consent. Corequisite: PIE-070.

ENL-119 Advanced Reading/Writing
6 credits, Fall/Winter/Spring/Summer
6 class hours/week

Advanced level students will practice academic reading, writing, and editing skills. Students generally take this course for more than one term to satisfy all requirements. Required: Instructor consent.

ENL-120 Advanced Communication Skills
3 credits, not offered every term
3 class hours/week

Develops fluency in speaking and listening in the contexts of school, work, family and community. Prepares students for success in discussions, interviews, conferences, presentations, and academic notetaking. Required: Instructor consent.

ERM

Courses with this prefix may not transfer with credit to a four-year institution unless applied as part of the 12 allowable professional technical credits for the AAOT or ASOT-Business.

Energy & Resource Management

ERM-100 Orientation to Energy & Resource Management [C]
3 credits, Fall
3 class, 3 lab hours/week

Overview of the energy, utility, and resource industries' career options. Through field trips, guest speakers, and research, students will discover and report on career options in the energy and resource industries.

ERM-101 Energy & Resource Technology I [C]
3 credits, Fall
3 class, 3 lab hours/week

Examine the history, development and segmentation of the energy industry in the Northwest. Research and report on the effects of regional energy policies and how they affect specific segments of the energy industry.

ERM-102 Energy & Resource Technology II: Electricity [C]
3 credits, Winter
3 class, 3 lab hours/week

Focus on generation sources of electricity, transmission and final delivery to the consumer. Examine basic principles of alternating and direct current as it affects electrical flow. Research and report on strategies/components of the electrical industry.

ERM-103 Energy & Resource Technology III: Natural Gas [C]
3 credits, Spring
3 class, 3 lab hours/week

Examine the origin and characteristics of natural gas and industry fundamentals in the Northwest. Focus on natural gas production, processing, transportation and marketing. Research and report on strategies/components for delivery and marketing of natural gas.

ERM-107 Career Portfolio [C]
3 credits, Fall/Spring
3 class, 3 lab hours/week

Develop and organize a portfolio to record knowledge and learning related to the energy and utility resource industries. Portfolio consists of resume, reference letters, work and learning samples, and network contacts.

ERM-108 Career Marketing Strategies [C]
3 credits, Winter
3 class, 3 lab hours/week

Expand and perfect portfolio as a job-marketing tool to demonstrate knowledge, skills and abilities in the areas of: energy & resource management, computer literacy, and leadership. Plan internship & practice interviewing techniques.

ERM-170 Energy Industry Performance, Health & Safety I
1-12 credits
Fall/Winter/Spring/Summer
8 class, 14 lab hours/week

Discover and develop industry-approved general behavior regarding the conduct and application of health, safety and performance issues. Course and fieldwork include acquiring and applying industry knowledge, skills, and practices to current and future work conditions.

ERM-180 Energy & Resource Management/CWE
3-6 credits

Fall/Winter/Spring/Summer

1.5 class, 9-18 job-site hours/week

Practical work experience in, and exploration of, an energy or resource company under the supervision of the instructor and employer. Required: instructor consent & CWE seminar or completion of ERM-107.

ERM-201 Energy Applications I: Renewable Energy Resources
6 credits, Fall

6 class, 6 lab hours

Access and interpret building performance, conversion technologies and the applications of renewable energy resources.

ERM-202 Energy Applications II
6 credits, Winter

6 class, 6 lab hours

Observe the concepts of leadership and management for energy generation and distribution. Develop strategies to expand application and resources.

ERM-203 Energy Applications III
6 credits, Spring

6 class, 6 lab hours

Energy seminar. Research and report on current developments of energy applications.

ERM-270 Energy Industry Performance, Health & Safety II
1-12 credits

Fall/Winter/Spring/Summer

8 class, 14 lab hours/week

In a leadership role, participate in industry-approved behavior regarding the conduct and application of specific health, safety and performance issues. Course and field work include applying and advancing industry knowledge, skills, and practices.

ERM-280 Focused Energy & Resource Management/CWE
3-6 credits

Fall/Winter/Spring/Summer

1.5 class, 9-18 job-site hours/week

Targeted on-the-job field experience in an energy or utility company related to the student's focused area of study. Supervised by the instructor and employer. Required: Instructor consent & CWE seminar or ERM-108.

ERM-286 Advanced Energy & Resource Management Applications
3-12 credits

Fall/Winter/Spring/Summer

2-8 class, 4-14 job-site hours/week

Focused application in the student's area of interest within the energy & resource industry: electric, gas, telecommunications, water or other alternative energy. Students work with an industry mentor to research/complete an agreed-upon project.

ESH

Courses with this prefix may not transfer with credit to a four-year institution unless applied as part of the 12 allowable professional technical credits for the AAOT or ASOT-Business.

Environmental Safety & Health**ESH-100 Environmental Regulations**

1-3 variable credits

Fall/Winter/Spring/Summer

33 hours/term

Distance Learning: Online. Students may enroll at anytime during the term. This course is an overview of environmental regulations as they pertain to industry, agriculture, schools and the general public. Major points of environmental law, federal and state regulatory statutes and regulations, and the agencies responsible for their enforcement. This course has been developed with the cooperation of DEQ. For more info visit <http://depts.clackamas.cc.or.us/esh/>

ESH-101 Hazardous Waste Management
2 credits, Fall/Winter/Spring/Summer

22 hours/term

Distance Learning: Online. Students may enroll at anytime during the term. DEQ authorized class. This class offers ways to reduce, identify, store, and dispose of hazardous waste in Oregon. Certificate of completion from CCC/DEQ. For more information visit <http://depts.clackamas.cc.or.us/esh/>

ESL

Courses with this prefix will not transfer with credit to a four-year institution. Courses are intended for ESL students.

English as a Second Language**ESL-010 ESL Tutoring (Literacy)**

0 credit, not offered every term

2-4 class hours/week

Adult students meet one-on-one or in a small group with a tutor to focus on specific learning needs. Sessions are held in various public places throughout Clackamas County, such as libraries, schools, churches, and the college campus. Tutors help to set student goals and a plan of learning. Required: Instructor consent.

ESL-018 Assess/Evaluation for New Students

0 credit, Fall/Winter/Spring/Summer

2-4 hours/term

New students in the adult ESL program receive information about classes offered, departmental and college policies, college services available, campus facilities, student responsibilities, and community resources. Required: Instructor consent.

ESL-019 Educational Planning for Returning Students

0 credit, Fall/Winter/Spring/Summer

1 class hour/term

This course is designed for returning students in the adult ESL program at CCC. Students meet with their instructors to review progress, revisit goals, and learn how to transition to other educational and training opportunities. Required: Instructor consent.

ESL-020 Life Skills 1

0 credit, not offered every term

3-6 class hours/week

Introduces the language necessary to function in day-to-day American society at the beginning level; listening, speaking, grammar, reading, and writing in the contexts of work, family, and community. Required: Instructor consent.

ESL-021 Life Skills 2

0 credit, not offered every term
3-6 class hours/week

Introduces the language necessary to function in day-to-day American society at the upper beginning level; listening, speaking, grammar, reading, and writing in the contexts of work, family, and community. Required: Instructor consent.

ESL-022 Life Skills 1 & 2

0 credit, Fall/Winter/Spring/Summer
3-6 class hours/week

Introduces the language necessary to function in day-to-day American society at the beginning levels; listening, speaking, grammar, reading, and writing in the contexts of work, family, and community. Required: Instructor consent.

ESL-024 English for the Family

0 credit, not offered every term
3-9 class hours/week

Improves self-sufficiency of families by enabling parents to meet goals, increase language literacy levels, enhance skills/experiences related to employability. Required: Instructor consent.

ESL-032 Low Intermediate Conversation

0 credit, Fall/Winter/Spring/Summer
3 class hours/week

Low intermediate level students learn and practice speaking and listening to improve their fluency in English for living and working situations. Required: Instructor consent.

ESL-033 Intermediate Conversation

0 credit, Fall/Winter/Spring/Summer
3 class hours/week

Intermediate level students learn and practice speaking and listening to improve their fluency in English for living and working situations. Required: Instructor consent.

ESL-034 Upper Intermediate Conversation

0 credit, not offered every term
3 class hours/week

High-intermediate level students learn and practice speaking and listening to improve their fluency in English for living and working situations. Required: Instructor consent.

ESL-035 Advanced Communication Skills

0 credit, not offered every term
3 class hours/week

Develops fluency in speaking and listening in the contexts of school, work, family and community. Prepares students for success in discussions, interviews, conferences, presentations, and academic notetaking. Required: Instructor consent.

ESL-040 Beginning Grammar

0 credit, Fall/Winter/Spring/Summer
3 class hours/week

Presentation and practice of the verb "to be," present continuous verb tense, nouns, descriptive/possessive adjectives, prepositions of place and time, and simple sentence structures in written and spoken English. Required: Instructor consent.

ESL-041 Upper Beginning Grammar

0 credit, Fall/Winter/Spring/Summer
3 class hours/week

Presentation and practice of simple present and simple past, present and past continuous, adverbs of frequency, and nouns in written and spoken English. Required: Instructor consent.

ESL-042 Intermediate Grammar A

0 credit, Fall/Spring
3 class hours/week

Part A of a 2-part series. Presentation and practice of past tense, used to, future/be going to, comparative and superlative adjectives, and question forms in written and spoken English. Required: Instructor consent.

ESL-043 Intermediate Grammar B

0 credit, Winter/Summer
3 class hours/week

Part B of a 2-part series. Presentation and practice of present perfect with time expressions and adverbs of frequency, present perfect continuous, and modals of possibility, necessity and advice in written and spoken English. Required: Instructor consent.

ESL-044 Upper Intermediate Grammar A

0 credit, Fall/Spring
3 class hours/week

Part A of a two part series of classes designed to help upper intermediate ESL students gain knowledge and proficiency in the use of verb forms that frequently occur together, gerunds, and infinitives. Required: Instructor consent.

ESL-045 Advanced Grammar A

0 credit, Fall/Spring
3 class, 1 lab hours/week

Part A of a 2-part series. Presentation and practice of adverbial clauses, discourse connectors, adverb phrases, and noun clauses in written and spoken English. Required: Instructor consent. Corequisite: ESL-070.

ESL-046 Advanced Grammar B

0 credit, Winter/Summer
3 class, 1 lab hours/week

Part B of a 2-part series. Presentation and practice of count/noncount nouns, definite/indefinite articles, modals, and conditional sentences in written and spoken English. Required: Instructor consent. Co-requisite: ESL-070.

ESL-047 Upper Intermediate Grammar B

0 credit, Winter/Summer
3 class hours/week

Part B of a 2-part series. Presentation and practice of adjective clauses, phrasal verbs, and passive voice in written and spoken English. Required: Instructor consent.

ESL-050 Beginning Reading/Writing

0 credit, Fall/Winter/Spring/Summer
3 class hours/week

Students who have limited knowledge of written English will read and write short sentences and read short paragraphs, gain reading and scanning skills to use in everyday life and in the workplace. Required: Instructor consent.

ESL-051 Upper Beginning Reading

0 credit, Fall/Winter/Spring/Summer
3 class hours/week

This course is designed for upper beginning level ESL students who read at the sentence level. Students will read short texts in order to improve reading skills. Required: Instructor consent.

ESL-052 Upper Beginning Writing

0 credit, Fall/Winter/Spring/Summer
3 class hours/week

This course is designed for upper beginning level ESL students who write at the sentence level. Students will write a variety of sentences and put related sentences in paragraph form. Required: Instructor consent.

ESL-053 Intermediate Reading/Writing
0 credit, Fall/Winter/Spring/Summer
6 class hours/week

Intermediate level students focus on paragraph level writing with emphasis on reading and writing skills as needed for college courses, the workplace, and everyday life. Required: Instructor consent.

ESL-054 Upper Intermediate Reading/Writing
0 credit, Fall/Winter/Spring/Summer
6 class hours/week

Upper intermediate students will practice reading and writing skills needed to succeed in college, the workplace, and everyday life. Introduction to longer compositions. Required: Instructor consent.

ESL-055 Advanced Reading/Writing
0 credit, Fall/Winter/Spring/Summer
6 class hours/week

Advanced level students will practice academic reading, writing, and editing skills. Students generally take this course for more than one term in order to satisfy all requirements. Required: Instructor consent.

ESL-056 Intermediate Reading
0 credit, Fall/Winter/Spring/Summer
3 class hours/week

This course is designed for intermediate level ESL students who read at the paragraph level. The major purpose of the course is to improve the student's reading skills as needed for more advanced ESL and college courses, in the workplace, and in everyday life. Required: Instructor consent.

ESL-057 Intermediate Writing
0 credit, Fall/Winter/Spring/Summer
3 class hours/week

This course is designed for intermediate level ESL students who are ready to begin writing at the paragraph level. The major purpose of the course is to improve the student's writing skills as needed for more advanced ESL and college courses, in the workplace, and in everyday life. Required: Instructor consent.

ESL-058 Upper Intermediate Reading
0 credit, Fall/Winter/Spring/Summer
3 class hours/week

This course is designed for the upper intermediate level ESL student who reads beyond the paragraph level to develop the reading skills needed to succeed in college and in everyday life. Required: Instructor consent.

ESL-059 Upper Intermediate Writing
0 credit, Fall/Winter/Spring/Summer
3 class hours/week

This course is designed for the upper intermediate level ESL student to develop the writing skills needed to succeed in college and in everyday life. Introduction to multiple paragraph essays. Required: Instructor consent.

ESL-060 Pronunciation
0 credit, not offered every term
3 class hours/week

For ESL students who want to sound more natural when speaking English. Focuses on increasing awareness of the sounds of American English, improving intelligibility, and producing speech more fluently. Required: Instructor consent.

ESL-063 American Idioms/A
0 credit, not offered every term
3 class hours/week

Part A of a 2-part series of classes. Introduces common American idioms and slang while practicing conversation skills at the upper intermediate level. Required: Instructor consent.

ESL-064 American Idioms/B
0 credit, not offered every term
3 class hours/week

Part B of a 2-part series of classes. Introduces common American idioms and slang while practicing conversation skills at the upper intermediate level. Required: Instructor consent.

ESL-067 Video and Conversation
0 credit, not offered every term
2 class hours/week

Intensifies intermediate/advanced ESL language skills in listening/speaking. Outside of class, view Crossroads Café video series, complete workbook exercises. In class, practice listening for specific information, participate in pair, small group, whole class activities. Required: Instructor consent.

ESL-070 Computer Lab
0 credit, Fall/Winter/Spring/Summer
3 lab hours/week

Provides opportunities to improve English language skills by using language learning software. Required: Instructor consent.

ESL-081 Upper Intermediate Reading Skills
0 credit, not offered every term
3 class hours/week

Upper intermediate level students will practice the reading skills needed to succeed in college and in everyday life. Required: Instructor consent.

ESL-084 Vocabulary Building
0 credit, not offered every term.
3 class hours/week

Develops upper intermediate to advanced level students' vocabulary range and vocabulary acquisition skills. Required: Instructor consent.

ESL-088 Skills for College Success
0 credit, not offered every term
3 class hours/week

For upper intermediate/advanced level ESL students who plan to attend a U.S. college or university. Increase knowledge of the culture/norms of the American classroom, college schedules/catalogs, analyze course materials, improve study/test-taking skills. Required: Instructor consent.

ESL-090 Beginning Workplace ESL
0 credit, not offered every term
1-6 hours/week

Helps beginning level students acquire the vocabulary, language structures, cultural information and practice they need to successfully perform their jobs, as well as understand company rules, safety procedures, policies and benefits. Required: Instructor consent.

ESL-091 Upper Beginning Workplace ESL
0 credit, not offered every term
1-6 hours/week

Helps upper beginning level students acquire the vocabulary, language structures, cultural information and practice they need to successfully perform their jobs, as well as understand company rules, safety procedures, policies and benefits. Required: Instructor consent.

ESL-092 Intermediate Workplace ESL
0 credit, not offered every term
1-6 hours/week

Helps intermediate level students to acquire the vocabulary, language structures, cultural information and practice they need to successfully perform their jobs, as well as understand company rules, safety procedures, policies and benefits. Required: Instructor consent.

ESL-093 Upper Intermediate Workplace ESL
0 credit, not offered every term
1-6 hours/week

Helps upper intermediate level students to acquire the vocabulary, language structures, cultural information and practice they need to successfully perform their jobs, as well as understand company rules, safety procedures, policies and benefits. Required: Instructor consent.

ESL-094 Advanced Workplace ESL
0 credit, not offered every term
1-6 hours/week

Helps advanced level students acquire the vocabulary, language structures, cultural information and practice they need to successfully perform their jobs, as well as understand company rules, safety procedures, policies and benefits. Required: Instructor consent.

ESR

Environmental Science

ESR-171 Environmental Science
4 credits, Fall
3 class, 3 lab hours/week

Introduction to environmental science issues, the scientific method, systems and feedback, biogeochemical cycles, human population growth, communities and ecosystems, productivity and energy flow, world food supply, environmental effects of agriculture, and endangered species. Meets the science requirement for the AAOT degree. Recommended: Pass MTH-060; placement in RD-115 & placement in WR-121.

ESR-172 Environmental Science
4 credits, Winter
3 class, 3 lab hours/week

Introduction to conservation issues, environmental toxicology, energy principles, environmental effects of fossil fuels and nuclear power, alternative energy sources, water conservation and management, water pollution, and treatment, global warming, air pollution and control. Meets the science requirement for the AAOT degree. Recommended: Pass MTH-060; placement in RD-115 & placement in WR-121.

ESR-173 Environmental Science
4 credits, Spring
3 class, 3 lab hours/week

Introduction to indoor air pollution, ozone depletion, environmental economics, urban environments, waste management, environmental effects of mineral development, environmental impact analysis and planning, biological diversity, ecological succession and restoration, and environmental values. Meets the science requirement for the AAOT degree. Recommended: Pass MTH-060; placement in RD-115 & placement in WR-121.

EST

Courses with this prefixes may not transfer with credit to a four-year institution.

Employment Skills Training

EST-081 Employment Skills Training Seminar
0-3 credits
Fall/ Winter/Spring/Summer
1-3 class hours/week

Develop an individualized program of study for a student and provides workplace skills and address work issues related to his/her career goal. Coursework is aimed at enhancing student employability through individualized projects and applications tailored to particular student needs.

EST-180 Employment Skills Training
2-6 credits
Fall/Winter/Spring/Summer
6-18 job site hours/week

Provide students with a training experience related to his/her career goal. Major emphasis will be given to workplace skills and issues. Coursework will focus on student career goals through job site training tailored to particular student needs.

FN

Food & Nutrition

FN-110 Personal Nutrition
3 credits, Spring
3 class hours/week

How nutrition affects health and fitness for the individual and the family. Analysis of present diet and methods to improve food preparation and habits.

FN-225 Nutrition
4 credits, Fall/Winter/Spring
4 class hours/week

The role of vitamins, minerals, and other nutrients in the development and maintenance of a healthy body. Examines diets for nutritional adequacy and current nutrition controversies. Also offered as a telecourse.

FR

French

FR-101 First-Year French
4 credits, Fall
4 class hours/week

The first year of academic French is designed to give the student a fundamental knowledge of pronunciation and intonation, structure and syntax as well as comprehension skills sufficient for basic communicative proficiency in the language. Recommended: Placement in RD-115 & placement in WR-121.

FR-102 First-Year French
4 credits, Winter
4 class hours/week

The first year of academic French is designed to give the student a fundamental knowledge of pronunciation and intonation, structure and syntax as well as comprehension skills sufficient for basic communicative proficiency in the language. Prerequisite: Pass FR-101 or instructor consent.

FR-103 First-Year French
4 credits, Spring
4 class hours/week

The first year of academic French is designed to give the student a fundamental knowledge of pronunciation and intonation, structure and syntax as well as comprehension skills sufficient for basic communicative proficiency in the language. Prerequisite: Pass FR-102 or instructor consent.

FR-111 French Conversation
3 credits, not offered every year
3 class hours/week

Designed to offer students a review of first year structures in the context of situations encountered while traveling, i.e. ordering in a restaurant, finding lodging, giving and asking directions, etc. Emphasis is on oral proficiency and preparing for second-year French. Pass FR-103 or instructor consent.

FR-201 Second-Year French
4 credits, Fall
4 class hours/week

The second year of academic French expands on first-year French in the review of grammar and in the cultural reading material. Communication skills are emphasized stressing oral proficiency. Meets the arts & letters requirement for the AAOT degree. Prerequisite: Pass FR-103 or instructor consent.

FR-202 Second-Year French
4 credits, Winter
4 class hours/week

The second year of academic French expands on first-year French in the review of grammar and in the cultural reading material. Communication skills are emphasized stressing oral proficiency. Meets the arts & letters requirement for the AAOT degree. Prerequisite: Pass FR-201 or instructor consent.

FR-203 Second-Year French
4 credits, Spring
4 class hours/week

The second year of academic French expands on first-year French in the review of grammar and in the cultural reading material. Communication skills are emphasized stressing oral proficiency. Meets the arts & letters requirement for the AAOT degree. Prerequisite: Pass FR-202 or instructor consent.

FRP

Courses with this prefix may not transfer with credit to a four-year institution unless applied as part of the 12 allowable professional technical credits for the AAOT or ASOT-Business.

**Fire Science
(Wildland)**

Note: The National Wildfire Coordinating Group (NWCG) is the governing body for wildland firefighting.

FRP-006 Q & A Wildland Firefighting
0 credits, Fall/Winter
1 class hour/term

Provides an overview of wildland firefighting & the requirements to become a wildland Firefighter 2 and includes a look at life on the fire line.

FRP-130 Intro to Wildland Firefighting
3 credits, Fall/Winter/Spring
32 class hours/term

NWCG S-130 & S-190 certified. Introduces students to wildland fire behavior & the skills necessary to fight wildland fires under close supervision. No prerequisites or firefighting experience required.

FRP-131 Advanced Firefighter Training
1 credit, not offered every term
10 class hours/term

NWCG S-131 certified. For firefighters who wish to become qualified in the first level of supervision, Advanced Firefighter/Squad Boss, being a first responder to initial fire attack. Prerequisite: Pass FRP 130 (S-130).

FRP-180 Wildland Fire/CWE
2-6 credits
Fall/Winter/Spring/Summer

1.5 class hours, 6-18 job-site hours/week
On-the-job experience in a wildland firefighting capacity meeting requirements as set forth in the wildland firefighting task book. Prerequisite: FRP-130. Co-requisite: instructor consent & CWE seminar.

FRP-200 Basic Incident Command System
1 credit, not offered every term
12 class hours/term

NWCG I-200 certified. Introduces the student to principles associated with the Incident Command System (ICS) covering organization, facilities, resource terminology and common responsibilities associated with incident assignments. No prerequisites.

FRP-211 Portable Pumps and Water Use
1 credit, not offered every term
16 class hours/term

NWCG S-211 certified. Practical use of portable pumps and accessories. No prerequisites.

FRP-212 Wildfire Power Saws
2 credits, not offered every term
20 class hours/term

NWCG S-212 certified. Learn techniques and mechanics of power saws that meet the functional requirements of a power saw operator on a wildland fire incident. No prerequisites.

FRP-215 Fire Operations in the Urban Interface
3 credits, Spring
33 class hours/term

NWCG S-215 certified. Meets the training needs for initial attack incident commanders and company officers confronting wildland fire that threatens life, property and improvements. Prerequisites: Pass FRP-131 (S-131)

FRP-216 Driving for the Fire Service
2 credits, not offered every term
28 class hours/term

NWCG S-216 certified. Knowledge and skills required of drivers to safely and efficiently operate fire vehicles in the fire environment. No prerequisites.

FRP-217 Interagency Helicopter Training
3 credits, not offered every term
30 class hours/term

NWCG S-217 certified. Provides basic knowledge and skills required by individuals who will be working with helicopters relative to fire & non-fire: safety, protective equipment, load calculations, landing areas, fueling, Helibase & Helispot Operations. No prerequisites.

FRP-230 Crew Boss (Single Resource)
2 credits, Spring
24 class hours/term

NWCG S-230 certified. Meets the training needs of a crew boss on a wildland fire incident. Prerequisite: Pass FRP-131 (S-131).

FRP-231 Engine Boss (Single Resource)
1 credit, Spring
10 class hours/term

NWCG S-231 certified. Develop proficiency in the performance of all duties associated with the single resource engine boss. Prerequisite: Pass FRP 131 (S-131) and FRP 230 (S-230)

FRP-232 Dozer Boss (Single Resource)
1 credit, not offered every term
16 class hours/term

NWCG S-232 certified. Dozer safety, inspection and qualification requirements. Prerequisite: Pass FRP-131 (S-131).

FRP-234 Ignition Operations
3 credits, not offered every term
32 class hours/term

NWCG 234 certified. Learn how to conduct a firing operation in a wildland fire or prescribed fire situation: fire behavior, firing techniques, holding and hazards. Prerequisites: FFI status, pass FRP-290 (S-290), and proficiency in map reading & orienteering.

FRP-239 Division/Group Supervisor
2 credits, Not offered every term
20 class hours/term

NWCG S-339 certified. Skills and knowledge required to perform the tasks of a Division or Group Supervisor as identified in the position task book, PMS 311-09. Prerequisite: Pass FRP-259 (S-330) or be a task force/strike team leader.

FRP-243 Survivor I: Map, Compass, GPS (Wildland Firefighters)
1-2 credit, Fall/Winter/Spring
10-20 class hours/term

Use maps, compass, grid locations, land descriptions, topography, distance, directions, and Global Positioning Systems (GPS). No prerequisites.

FRP-244 Survivor II: Wilderness
1-2 credits, Fall/Winter/Spring
10-20 class hours/term

Be prepared to survive in the wilderness: the psychology of surviving and what to do when things go wrong. The *USAF Search & Rescue Survival Manual* is the text. No prerequisites.

FRP-249 Leadership for Firefighters
2 credits, Winter
20 class hours/term

NWCG L-280 certified. Develop an awareness of the human factors on the fireline, self-assess skills and abilities, and practice problem solving events in small teams. Pass FRP-130 (S-130).

FRP-259 Task Force/Strike Team Leader
2 credits, not offered every term
24 class hours/term

NWCG S-330 certified. Learn to recognize, plan and implement appropriate tactics in various incident situations with various resources and identify hazards & risks and mitigate them. Prerequisites: FF1 and Pass FRP-230 (S-230).

FRP-260 Interagency Incident Management
1 credit, not offered every term
16 class hours/term

NWCG S-260 certified. Provides the prerequisite knowledge and skills to perform the tasks of the positions in the Incident Command System (ICS) for which NWCG S-260 is required. Prerequisite: FF1.

FRP-270 Basic Air Operations
1 credit, Spring
10 class hours/term

NWCG S-270 certified. A survey of the use of aircraft in fire suppression and how to conduct yourself in and around aircraft. No prerequisites.

FRP-280 Wildland Fire/Advanced CWE
2-6 credits
Fall/Winter/Spring/Summer

1.5 class hours, 6-18 job-site hours/week
On-the-job experience in a wildland firefighting capacity meeting requirements as set forth in the wildland firefighting task book. Prerequisite: Pass FRP 180 & FRP-131. Co-requisite: instructor consent & CWE seminar.

FRP-290 Intermediate Wildland Fire Behavior
3 credits, Winter
30 class hours/term

NWCG S-290 certified. Study of weather and environmental factors and how these factors affect wildland fires. Prerequisite: Pass FRP-130 (S-130).

G

Geology

G-101 General Geology
4 credits, Fall
3 class, 3 lab hours/week

For liberal arts majors. Introduces geologic principles and concepts, earth structure, igneous, sedimentary, and metamorphic rock environments; volcanic activity, and landforms. Introduction to minerals, ores, and basic types of rocks. Meets the science requirement for the AAOT degree.

G-102 General Geology
4 credits, Winter
3 class, 3 lab hours/week

For liberal arts majors. Principles in landform development of glacial, coastal, desert, groundwater, systems, rivers and erosional processes. Earth history and environmental issues in geology. Introduction to topographic and geologic maps, structural geology, fossils. Meets the science requirement for the AAOT degree.

G-103 General Geology
4 credits, Spring
3 class, 3 lab hours/week

For liberal arts majors. Principles of plate tectonics, earth's internal structure, seismic activity, mountain building, ocean features, earth resources. Introduction to compass work, field techniques, and GPS use. Meets the science requirement for the AAOT degree.

G-119 Rocks & Minerals
3 credits, not offered every year
3 class hours/week

Introduction to the processes of rock and mineral formation. Emphasis on the geologic environments that form important ores, minerals, and basic rock types; geologic processes associated with mountain, volcanic, erosional, and sedimentary environments.

G-124 Natural History/Parks & Monuments
3 credits, Winter
3 class hours/week

Introduction to the natural history and geology of North America's most beautiful scenic areas. The geologic history and diversity of ecological habitats provide insight to the development of North America. Covers parks of geologic, ecological, and historical significance.

G-145 Geology of Pacific Northwest
3 credits, Fall
3 class hours/week

Explores the scenic geology of Northwest landscapes, historic development and current problems in environmental geology. Introduction to rock types, geologic processes, and hazards of the Northwest from the Blue Mountains to the coast. Optional field trips provided.

G-148 Volcanoes & Earthquakes
3 credits, Spring
3 class hours/week

Examines the geological processes that create volcanoes and earthquakes and the hazards associated with them. Examines basic geologic features, monitoring techniques, hazards, prediction methods, and future events, using historic episodes of volcanic eruptions and earthquakes.

G-201 General Geology
4 credits, Fall
3 class, 3 lab hours/week

For geology and science majors. Introduces geologic principles and concepts, weathering, soils, earth structure, igneous, sedimentary, metamorphic rocks, volcanic activity, and landforms. Introduction to environmental geology. Meets the science requirement for the AAOT degree.

G-202 General Geology
4 credits, Winter
3 class, 3 lab hours/week

For geology and science majors. Principles in landform development of glacial, coastal, desert, groundwater systems; rivers, erosional processes, earth history, fossils, and environmental issues. Introduction to rectangular survey, topographic and geologic maps, structural geology. Meets the science requirement for the AAOT degree.

G-203 General Geology
4 credits, Spring
3 class, 3 lab hours/week

For geology and science majors. Principles of plate tectonics, earth's internal structure, seismic activity, mountain building, oceanography, earth resources. Introduction to Brunton compass work, field mapping techniques, GPS applications and use. Meets the science requirement for the AAOT degree.

G-280 Geology/CWE
2-6 credits, Fall/Winter/Spring
1.5 class, 6-18 job site hours/week

Cooperative work experience. Provides students with on-the-job work experience in the field of geology. Required: Instructor consent & a CWE seminar.

GE

General Engineering

GE-101A Engineering Problem Solving
2 credits, Fall
2 class hours/week

Introduction to basic ideas and tools of the engineering profession. Rudiments and methods of engineering analysis, design and problem solving. Emphasis on developing skills in the algorithmic method. Corequisite: MTH-251.

GE-101B Engineering Programming
2 credits, Fall
2 class hours/week

Intro to basic ideas and tools of the engineering profession. Basic preparation in rudiments and working methods of engineering design, analysis, and problem solving, with emphasis on developing skills in computer-aided problem solving methods. Intro to structured computer programming methods via MATLAB scripting language. Corequisite: MTH-251.

GE-102 Engineering Computation
4 credits, Fall
4 class hours/week

Introduction to data structures for solving engineering problems. Continues developing skills in the algorithmic method for engineering problem solving. Recommended: Placement in RD-115 & placement in WR-121. Corequisite: GE-101A.

GE-115 Engineering Graphics
4 credits, Spring
6 class hours/week

Mechanical design automation software used to design parts and assemblies, design methods used to build, maintain and modify parts. Covers 2-D documentation and isometric views cooperated with ASME standards. Includes real time shaded 3-D modeling. Recommended: Placement in RD-115 & placement in WR-121. Prerequisite: GE-101A.

GE-211 Statics
4 credits, Fall
4 class hours/week

First term of engineering mechanics sequence. Force analysis in structures and machines under various loading conditions. Recommended: Placement in RD-115 & placement in WR-121. Prerequisite: Pass MTH-253. Corequisite: PH-211.

GE-212 Dynamics
4 credits, Winter
4 class hours/week

Kinematics, kinetics, work-energy, and impulse-momentum relationships of engineering systems. Recommended: Placement in RD-115 & placement in WR-121. Prerequisites: Pass GE-211 & pass PH-211.

GE-213 Strength of Materials
4 credits, Spring
4 class hours/week

The relation of externally applied loads and their internal effects on deformable bodies; such as columns, shafts, beams, and statically indeterminate structures or systems made up of such members. Recommended: Placement in RD-115 & placement in WR-121. Prerequisite: Pass GE-211.

GED

Courses with this prefix will not transfer with credit to a four-year institution.

General Educational Development/Adult Basic Education

GED-011 GED En Español
0 credit, Fall/Winter/Spring/Summer
66 hours/term

Basic academic skill development instruction offered in Spanish. Diagnostic tests determine individual academic needs. Open-entry, open-exit class offered at Campus Learning Center. Required: Instructor consent.

GED-011 GED On TV
Fall/Winter/Spring/Summer
20-240 hours/term

This course allows students to complete all requirements to take the GED test to obtain a high school equivalency certificate. Students watch the programs, complete workbooks and the five required tests.

GED-015 GED Preparation
Fall/Winter/Spring
20-240 hours/term

Basic academic skill development. Diagnostic tests determine individual academic needs. Students who pass General Educational Development (GED) tests receive high school equivalency certificates. Open-entry, open-exit classes offered at Tri-City Alternative Program and Young Parent Opportunity Program locations. Required: Instructor consent.

GED-049 Latino GED & Life Skills
0 credit, Fall/Winter/Spring/Summer
6 class hours/week

Offered in Spanish. Basic academic skill development with emphasis on requirements to take the GED test to obtain a high school equivalency certificate. Also focuses on basic life skills, personal and career goals and interests.

GEO

Geography

GEO-100 Introduction to Physical Geography
4 credits, Fall/Winter/Spring
4 class hours/week

Physical elements of geography and the environment in which people live. Focuses on natural processes that create physical diversity on the earth including weather and climate, vegetation and soils, and landforms. Meets the social science requirement for the AAOT degree. Recommended: Placement in RD-115.

GEO-110 Cultural & Human Geography
4 credits, Fall/Winter/Spring
4 class hours/week

Human population, agriculture, political patterns, language, religion, folk culture, popular culture, ethnic culture, urban landscapes, industry, and transportation. Meets the social science requirement for the AAOT degree. Recommended: Placement in RD-115.

GEO-130 Introduction to Environmental Geography
4 credits, not offered every term
4 class hours/week

Explores the contemporary global environmental problems such as: overpopulation, over consumption, ozone layer depletion, pollution, acid rain, deforestation, desertification, and waste problems. Examines alternative sources of energy to fossil fuel and sustainable development strategies. Meets the social science requirement for the AAOT degree. Recommended: Placement in RD-115.

GEO-230 World Regions & Landscapes
4 credits, not offered every term
4 class hours/week

Provides students with the fundamental geographical knowledge of world countries and their path towards development. Familiarizes students with the regional similarities and differences throughout the world. Meets the social science requirement for the AAOT degree. Recommended: Placement in RD-115.

GEO-280 Geography/CWE
2-6 credits, Fall/Winter/Spring
1.5 class, 6-18 job site hours/week
Cooperative work experience. Provides students with on-the-job work experience in the field of geography. Required: Instructor consent & a CWE seminar.

GER

German

GER-101 First-Year German
4 credits, Fall
4 class hours/week

Introduction to sound system and basic structural patterns of German. Emphasis on the skills of listening, comprehension, speaking, reading, writing, and cultural similarities and differences. Recommended: Placement in RD-115 & placement in WR-121.

GER-102 First-Year German
4 credits, Winter
4 class hours/week

Introduction to sound system and basic structural patterns of German. Emphasis on the skills of listening, comprehension, speaking, reading, writing, and cultural similarities and differences. Prerequisite: Pass GER-101 or instructor consent.

GER-103 First-Year German
4 credits, Spring
4 class hours/week

Introduction to sound system and basic structural patterns of German. Emphasis on the skills of listening, comprehension, speaking, reading, writing, and cultural similarities and differences. Prerequisite: Pass GER-102 or instructor consent.

GER-201 Second-Year German
4 credits, Fall
4 class hours/week

Review and expansion of basic language skills through discussion, reading, and writing of varied contemporary topics from the German language and cultural area. Meets the arts & letters requirement for the AAOT degree. Prerequisite: Pass GER-103 or instructor consent.

GER-202 Second-Year German
4 credits, Winter
4 class hours/week

Review and expansion of basic language skills through discussion, reading, and writing of varied contemporary topics from the German language and cultural area. Meets the arts & letters requirement for the AAOT degree. Prerequisite: Pass GER-201 or instructor consent.

GER-203 Second-Year German
4 credits, Spring
4 class hours/week

Review and expansion of basic language skills through discussion, reading, and writing of varied contemporary topics from the German language and cultural area. Meets the arts & letters requirement for the AAOT degree. Prerequisite: Pass GER-202 or instructor consent.

GIS

Geographic Information Systems

GIS-131 GPS/GIS Mapping with ESRI ArcPad
1 credit, not offered every term
16 class hours/term

ESRI's ArcPad provides portable database access, mapping, GIS and navigation functions to users in the field using handheld computers.

GIS-201 Introduction to Geographic Information System
4 credits, Fall
8 class hours/week

Provides key GIS concepts, methodologies, and techniques. Emphasis is on developing an understanding of GIS applications, technical GIS concepts, terminology, methodology and problem solving techniques.

GIS-210 Research Techniques

2 credits, Fall
4 class hours/week

Focuses on geospatial data. How it is identified, obtained, organized, queried and managed in GIS. Covers integrating disparate data sources, industry standard formats, acquiring GPS and remotely sensed data and deriving spatial data from sources.

GIS-220 CAD Skills for GIS

4 credits, Winter
8 class hours/week

Introduction to basic CAD drawing and editing skills, their use in GIS, and the creation of CAD geometry that is compatible with GIS applications. Prerequisites: CDT-104 and GIS 201 Instructor consent required.

GIS-230 Computer Cartography

3 credits, Winter
6 class hours/term

Introduction to MapInfo cartographic capabilities. Emphasis is on existing data, not collection and preparation. Provides an introduction to, and awareness of the background of cartographic theory. Co-requisite: GIS-220. Prerequisite: GIS-201.

GIS-232 Data Collection & Application

3 credits, Spring
6 class hours/week

Introduction to data collection techniques using global positioning systems, PDAs, and related software. Emphasis on different ways to create data through existing surveys, compilation of data from many sources. Merging data from differing sources, etc. Prerequisite: CDT-104

GIS-234 Aerial Photo Interpretation

3 credits, Spring
6 class hours/week

Introduction to the science of aerial photography, land use classification, and techniques used to interpret images, along with relevant fieldwork. Prerequisite: GIS-230.

GIS-236 Visual Basic Programming for GIS

3 credits, Spring
3 class hours/week

An introduction to Object Oriented Programming and Visual Basic for Application (VBA) programming for ArcGIS. Basics of VBA and ArcObjects are explained so students can create VBA macros to customize the ArcGIS environment. Prerequisites: CDT-104, CS-121.

GIS-250 GIS Field Work

4 credits, Summer

Student will work on a project with a local company or agency in order to gain real-world field experience in a variety of conditions and situations. Prerequisite: GIS-282

GIS-254 Intro to ArcView GIS

1 credit, not offered every term
16 class hours/term

Provides conceptual overview and hands-on exposure using ArcView GIS 3.x software. Will create, edit, display, query and analyze geographic and tabular data to create presentation quality maps and charts.

GIS-280 GIS/CWE

2-6V credits, Spring

Cooperative Work Experience (co-op) is a process of education that integrates a student's classroom work with experience obtained through a cooperating employer. Required: Instructor consent.

GIS-281 ArcGIS I

5 credits, Spring
10 class hours/week

Introduces the essential skills needed to navigate and operate ArcGIS at a basic level. Includes how to utilize GIS concepts, methods and techniques in conjunction with problem solving techniques to accomplish assigned real world examples. Prerequisites: GIS-220 and GIS 230.

GIS-282 ArcGIS II

5 credits, Fall
10 class hours/week

Introduction to the object-oriented data model. Working with geodatabases, datasets and feature classes. Additional topics include: establishing topological relationships, versioning, and analysis of geometric networks. Advanced surface and cell-based modeling will also be covered. Prerequisite: GIS-281.

GIS-284 GIS Software Applications

5 credits, Fall
10 class hours/week

Introduces standard techniques in typical applications of GIS, and addresses the commonalities of techniques across application areas. Corequisite: GIS 282. Prerequisite: GIS-232.

GIS-286 Remote Sensing

4 credits, Winter
8 class hours/week

This course covers the overview of data sources, methodology for remotely sensed data, application of data, and transformation of remotely sensed data into GRID. Prerequisite: GIS-234.

GIS-287 Spatial Modeling and Analysis

5 credits, Winter
10 class hours/week

Introduces answering analytical questions, the ability to overlay data sources and combine for project specific purposes. Covers spatial modeling tools to answer complex GIS questions, and the differences of analysis using vector vs. raster data. Prerequisites: GIS-284, and GIS-288.

GIS-288 Advanced Databases for GIS

3 credits, Winter
6 class hours/week

Emphasis is on design, implementation, and documentation of enterprise GIS Databases. Students will work to create advanced database systems to enhance GIS software applications. Prerequisite: CS-121.

GIS-289 Special Project

3 credits, Spring

Design and execute a project that can be incorporated into the work experience. May be a project needed by the CWE employer or a project of interest to the student under the GIS supervisor direction.

GS**General Science**

See also Arts and Sciences (ASC).

GS-104 Physics

4 credits, Spring
3 class, 3 lab hours/week

Concepts and applications of mechanics, electricity and magnetism, waves, optics, and relativity. Meets the science requirement for the AAOT degree.

GS-105 Chemistry

4 credits, Fall
3 class, 3 lab hours/week

Basic knowledge of introductory chemistry. Matter and energy, models of the atom, the periodic table, naming compounds, chemical reactions, gases, liquids and solids, chemical bonding, and the mole concept. Meets the science requirement for the AAOT degree.

GS-106 Earth Science

4 credits, Winter
3 class, 3 lab hours/week

Earth structure, plate tectonics, land form development of shorelines, deserts, mountain ranges, glaciers, deep oceans, etc. Study of minerals, rock of volcanic, sedimentary, and metamorphic origin. Meets the science requirement for the AAOT degree.

GS-107 Astronomy

4 credits, Fall/Winter/Spring
3 class, 3 lab hours/week

Distance Learning: Online. Survey of astronomy for non-science majors. Topics may include: history of astronomy, planets and moons of the solar system, asteroids, meteors, comets, properties of stars, stellar evolution, star clusters, properties of galaxies, and cosmology. Meets the science requirement for the AAOT degree. Also offered as an online course.

GS-109 Meteorology

4 credits, not offered every year
3 class hours/week

Distance Learning: Online. A study of the atmosphere, its composition, structure and properties with emphasis on the various processes responsible for weather, climate controls and change, and the impact of atmospheric phenomena on society.

GS-153 Introduction to Cosmology

4 credits, Spring
3 class, 3 lab hours/week

An introduction to modern scientific cosmology for non-science majors. Introduction to the research and developments in physics and astronomy that contributed to the modern model of the history of the universe. Meets the science requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

GS-160 Observational Astronomy

3 credits, Summer
3 class hours/week

Designed to introduce students to the fundamentals of observing the night sky. Students will be exposed to observational techniques and study the use of observational aids.

HD

Courses with this prefix may not transfer with credit to a four-year institution unless applied as part of the 12 allowable professional technical credits for the AAOT or ASOT-Business.

Human Development & Career Planning

HD-100 College Survival

1-6 credits, not offered every term
1 class hour/week

Covers various topics supporting student success and retention. May be repeated for credit.

HD-100 College Survival/Disabilities

1-6 credits, not offered every term
1 class hour/week

For students with disabilities. Addresses the functional difficulties that a disability may impose to academic access and success. Emphasis on developing skills that increase success in college and self advocacy planning for access needs.

HD-100 New Student Experience

1 credit, Fall
10 class hours/term

Designed to build college identity and introduce students to college systems and services. Focus on academic requirements and develop academic career plans.

HD-100 The Clackamas Experience

1 credit, Fall/Winter/Spring
1 class hour/week

Designed for international students entering the PIE (Program of Intensive English) program or college for the first time. Introduces the PIE program, college policies and procedures, explores career interests, possible programs of study, matriculation procedures, and culture shock. Required: Instructor consent.

HD-101 Service Learning Experience I

1 credit, Fall/Winter/Spring
1 class, 22 service hours/term

Provides students with a service learning experience in a community setting. Students complete 22 hours of volunteer work and participate in seminars. Provides information, skill building, reflection and assessment methods. Required: Instructor consent.

HD-102 Service Learning Experience II

2-6 credits, Fall/Winter/Spring
8 class, 3-12 lab hours/term

A continuation of HD-101. Recommended: Pass HD-101. Required: Instructor consent. Pending State approval.

HD-110 Career Planning

2 credits, not offered every term
2 class hours/week

Identify aptitudes and abilities, examine the potential job market and gain knowledge about training and educational opportunities. This course is part of the Life and Career Options Program. Corequisites: HD-114 & HD-202.

HD-114 Life Planning

2 credits, not offered every term
2 class hours/week

Identify personal interests, social and interpersonal skills, home and volunteer activities and develop a plan to use the transferable skills in future employment. This course is part of the Life and Career Options Program. Corequisites: HD-110 & HD-202.

HD-120 New Student College Success

1 credit, Fall/Winter/Spring
1 class hour/week

Provides strategies for creating college success including understanding self-management, increasing motivation, meaningful goal setting, controlling personal time and energy, effective study habits, use of on and off campus resources.

HD-140 Career Exploration

1-3 credits
Fall/Winter/Spring/Summer
1-3 class hours/week

Students use information about themselves (values, interests, personality and skills) and information about the world of work (career and industries) to make long term career decisions.

HD-144 Introduction to Assertiveness

1 credit, not offered every term
1 class hour/week

Provides basic communication skills students can use to state or declare their rights in a positive fashion to obtain desired results in career, social, and personal relations.

HD-145 Stress Management

1 credit, not offered every term
1 class hour/week

Identifies specific personal stressors and focus on developing skills that enable students to deal more effectively with stress.

HD-146 Values Clarification

1 credit, not offered every term
1 class hour/week

Helps students examine beliefs, attitudes, and values behind decisions and actions. The student will examine whether behavior matches stated beliefs, evaluate the consequences of choices, and focus on clarifying a personal value system.

HD-147 Decision Making

1 credit, Fall/Winter/Spring/Summer
1 class/hour week

Develop and improve your process for making satisfying choices. The basics of decision making and processes for making personal, social, and work choices are included. Use this class for your current decision needs.

HD-148 Dealing with Depression

1 credit, not offered every term
1 class hour/week

Introduction to causal theories, symptoms, treatments and preventive methods for depression, a common mood disorder.

HD-153 Managing Conflict in Your Life

1 credit, not offered every term
1 class hour/week

Introduction to managing conflict in a positive way. Examine personal beliefs about conflict and become more effective in solving problems.

HD-154 Building Self-Confidence

1 credit, not offered every term
1 class hour/week

Addresses elements forming and impacting self-confidence, including dealing with fear, self-esteem, personal power and establishing your center.

HD-155 Education Planning: You Decide

1 credit, Fall/Winter/Spring/Summer
1 class hour/week

Develop a clear awareness of life and career goals, degree options, and employment trends. Provides a basis for selecting a major and planning your education.

HD-156 Creative Goal Setting

1 credit, not offered every term
1 class hour/week

Use the creative process with a variety of media to define, clarify, plan, and achieve personal or professional goals.

HD-160 Leadership Development

3 credits, Fall/Winter/Spring
3 class hours/week

Exploration of leadership theories, practices, and skills. Provides opportunity for students to identify and develop leadership philosophy and style. Topics include decision-making, group dynamics, communication, and conflict mediation. Pending state approval.

HD-190 Latino Leadership

1-3 credits, Fall/Winter/Spring
1.5 class hours/week, 6 hours one Saturday/month

Teaches students of Latino descent intercultural and leadership skills, communication strategies, Latino History in the U.S. and the mentoring process.

HD-202 Life Transitions

3 credits, Fall/Winter/Spring/Summer
3 class hours/week

Identify individual goals and objectives and design a program, including personal growth, to overcome barriers to economic self-sufficiency. This course is part of the Life and Career Options Program. Corequisites: HD-110 & HD-114 or HD-208.

HD-208 Career & Life Planning

3 credits, Fall/Winter/Spring/Summer
3 class hours/week

Identify aptitudes and abilities, examine the potential job market and gain knowledge about training and educational opportunities. Identify personal interests, social and interpersonal skills, home and volunteer activities and develop a plan to use the transferable skills in future employment. This course is part of the Life and Career Options Program. Corequisite: HD-202.

HD-209 LCOP 2: Career Advancement

3 credits, not offered every term
3 class hours/week

Explore ways to retain jobs, enhance productivity on the job, develop work skills to advance career opportunities beyond the current level of employment within organizations.

HD-210 Advanced Life and Career Options (Bridges II)

3 credits, not offered every term
3 class hours/week

Continued exploration of education and career options and overcoming the barriers that prevent attainment of personal, education, and career goals. Must have successfully completed Bridges I classes. Prerequisites: HD-202-04 and HD-208-04. Corequisites: SKH-030-05 and SKH-030-06 and HD-120-05. Required: Instructor consent.

HD-215 Transfer Success

1 credit, not offered every term
1 class hour/week

This course is designed to assist students with all elements of the process of transferring from Clackamas to any 4-year college or university.

HDF

Courses with this prefix may not transfer with credit to a four-year institution unless applied as part of the 12 allowable professional technical credits for the AAOT or ASOT-Business.

Family Studies

See also Early Childhood Education (ECE).

HDF-140 Contemporary American Families

3 credits, Spring
3 class hours/week

Focuses on the diversity of the American family today, and a historical overview of changes in the family environment and structure. Become familiar with internal/external factors that influence families such as parenting, violence, gender, divorce, remarriage, economics, and culture.

HDF-141 Effective Parenting I

3 credits, Fall
3 class hours/week

Focuses on long-term goals and increasing parent's ability to readjust to changes in children's developmental stages. Explore how young children think, feel, and act, and effective ways to teach children cooperation, discipline and confidence.

HDF-142 Effective Parenting II

3 credits, Winter
3 class hours/week

Explore how parents are a major influence on children's development, and methods of parenting/problem-solving that help to prepare children to meet challenges with confidence; parenting skills to build children's self-esteem, developmental responsibility.

HDF-143 Effective Parenting III

3 credits, Spring
3 class hours/week

Emphasizes positive family problem-solving to help children become responsible, caring, loving individuals. Explore why discipline is not learned through threats and bribes. Buffer children from dangers of sexual promiscuity, drug abuse, self-destructive behavior.

HDF-144 Effective Parenting IV

3 credits, not offered every term
3 class hours/week

Focuses on effective communication techniques. Help children deal with feelings, engage in cooperative behavior, and the importance of validating children's feelings.

HDF-225 Prenatal, Infant & Toddler Development

3 credits, Fall
3 class hours/week

Explores the principles of child development prenatal through three years of age. Emphasis will be placed on the physical, intellectual, emotional and social growth and development of young children.

HDF-247 Preschool Child Development

3 credits, Winter
3 class hours/week

Emphasis on principles of development in children 2 to 5 years, including physical, cognitive, social and emotional growth, observation and assessment.

HDF-260 Child Abuse & Neglect

3 credits, Fall/Winter/Spring
3 class hours/week

Online course. Overview of child abuse problems for students interested in child care education and/or human services. A look at causes of abuse, abused child, abusive parents, role of teachers, areas of treatment, education, resources that can assist children and parents.

HE/HPE**Health****HE-151 Body & Drugs**

3 credits, Fall/Winter/Spring
3 class hours/week

Examines drugs, their physiological and psychological effects and implications of treatment and prevention. Covers food additives, prescription medications, and chemicals in the environment.

HE-204 Nutrition & Weight Control

3 credits, Fall/Winter/Spring
3 class hours/week

Methods of maintaining or improving fitness by considering diets and dieting, obesity, types of exercise, physical testing, cardio-vascular fitness and nutritional concepts. Also offered as a telecourse.

HE-205 Youth Addictions

3 credits, Winter/Spring
3 class hours/week

Increase knowledge of adolescent development and programs designed for prevention, assessment, intervention and treatment of chemically dependent youth. Investigate specific techniques for counseling youth. Required for Criminal Justice and Corrections students.

HE-249 Mental Health

3 credits, Fall/Winter/Spring
3 class hours/week

Examines factors which influence emotional and mental well-being. Emphasis on handling day-to-day situations in a positive, healthful manner.

HE-250 Personal Health

3 credits, Fall/Winter/Spring
3 class hours/week

Explores the interaction of health and the quality of life. Includes emotional behavior, drugs, disease, nutrition, human sexuality, cardiovascular functioning, and medical care. Meets health and physical education requirement for the Associate of Arts Oregon Transfer Degree. Also offered as a telecourse and an online course.

HE-252 First Aid/CPR

3 credits, Fall/Winter/Spring
3 class hours/week

Immediate and temporary care for injuries and sudden illness. Covers poisoning, control of bleeding, and proper methods of transportation, splinting, and bandaging. Successful completion (A or B grade) of course leads to a Red Cross Responding to Emergencies, First Aid and Community CPR Certification.

HE-255 Body & Alcohol

3 credits, Fall/Winter/Spring
3 class hours/week

Covers alcohol as a drug, problem drinking, alcohol use and its effect on family, social and economic well-being, and the rehabilitation process.

HE-261 Community CPR

1 credit, Fall/Winter/Spring
8 class, 2 hours TBA/term

Completion of class with a passing grade of B or better entitles the student to an American Red Cross Certification in Adult, Child and Infant Cardiopulmonary Resuscitation.

HE-280 Health/CWE

2-6 credits
Fall/Winter/Spring/Summer

1.5 class, 18 job site hours/week
Cooperative work experience. Off-site work experience in a health-related occupation. Required: Instructor consent & a CWE Seminar.

HPE-295 Health & Fitness for Life

3 credits, Fall/Winter/Spring/Summer
5 class hours/week, 5 hours TBA/term

Explores interaction of physical fitness and health. Meets three times a week for personal fitness assessment and two weekly classroom sessions. Related topics include: nutrition, stress reduction, relaxation techniques, goal setting, and weight control. Meets health and physical education requirement for the Associate of Arts Oregon Transfer Degree.

HPE-296 Health & Fitness for Industry I

2 credits, Fall/Winter/Spring
1 class, 3 lab hours/week

Designed for students entering or already in physically demanding industrial occupations. Emphasis on identification and analysis of personal health and wellness issues as related to actual job setting.

HPE-297 Health & Fitness for Industry II
2 credits, Fall/Winter/Spring
1 class, 3 lab hours/week

Designed for students entering or already in physically demanding industrial occupations. Emphasis on identification and analysis of health and wellness issues as related to actual job site itself.

HOR

Courses with this prefix may not transfer with credit to a four-year institution unless applied as part of the 12 allowable professional technical credits for the AAOT or ASOT-Business.

Horticulture

HOR-111 Horticulture Practicum/Fall
6 credits, Fall
7 class, 4 lab hours/week

Aspects of practical horticulture. Emphasis on container and field nursery production, greenhouse crops, turf and landscape installation and maintenance. Practice in basic procedures of plant propagation, soil, water and fertilizer management, and transplanting. Seasonal projects parallel Horticulture classes. **Oregon State University transfer course.**

HOR-114 Garden Design
1 credit, Winter or Spring
10.5 class hours/term

Introductory course for students to gain understanding and skills in the area of planning garden areas, including drawing skills to express garden schemes.

HOR-122 Greenhouse Crops-Potted Plants
3 credits, Fall
3 class, 1 lab hour/week

Environmental influences on plant growth, crop scheduling, greenhouse structures and equipment. Emphasis on foliage and flowering potted plant production.

HOR-123 Landscape Maintenance
3 credits, Fall
3 class, 1 lab hour/week

Principles and practices of landscape maintenance, plant growth and development, soil-water-fertilizer management, pruning, turf, pest control, diagnosis of problems in trees and shrubs, and maintenance scheduling.

HOR-130 Plant Propagation Theory
3 credits, Winter
3 class hours/week

Covers plant anatomy and reproduction techniques of plants from seed, cuttings, grafting, division, and micro-propagation. Offers an in-depth overview of propagation systems that may be selected.

HOR-131 Tree & Shrub Pruning/Winter
3 credits, Winter
3 class, 1 lab hour/week

Emphasis on dormant pruning of fruiting and ornamental plants. Training in dormant pruning and training of grapes, fruit trees, deciduous, evergreens, ornamental trees and shrubs. Basic woody plant anatomy, growth, and development.

HOR-132 Pesticide Selection & Use
3 credits, Winter/Spring
3 class hours/week

Study of control methods for weed, insect, and disease pests affecting ornamental plants, emphasizing chemical and non-chemical control options, selection and proper application when handling pesticides is included. State testing for pesticide license and recertification credit is available. Also offered as an online course spring term.

HOR-133 Horticulture Practicum/Winter
6 credits, Winter
7 class, 4 lab hours/week

Aspects of practical horticulture. Emphasis on container and field nursery production, greenhouse crops, turf and landscape installation and maintenance. Practice in basic procedures of plant propagation, soil, water and fertilizer management, transplanting, pruning, pesticide application, and equipment operation.

HOR-134 Herb Growing & Gardening
1 credit, Winter or Spring
10.5 class hours/term

Study of herb plant propagation and garden use. Garden culture and design covered.

HOR-140 Soils & Fertilizers
3 credits, Spring
3 class hours/week

Soil characteristics and management, including nutritional elements and the relationship between the soil and plant growth.

HOR-142 Greenhouse Crops-Bedding Plants
3 credits, Spring
3 class, 1 lab hour/week

Detailed study of environmental influences on individual crops, their requirements, scheduling, including annual, biennial, and perennial plant production.

HOR-143 Horticulture Practicum/Spring
6 credits, Spring
7 class, 4 lab hours/week

Aspects of practical horticulture. Emphasis on container and field nursery production, greenhouse crops, turf and landscape installation and maintenance. Practice of plant propagation, soil, water and fertilizer management, transplanting, equipment operation, and maintenance. Seasonal projects parallel Horticulture classes.

HOR-144 Basic Pruning
1 credit, Winter
16 class hours/term

Why and how to prune trees, shrubs, and vines. Covers tools used for various pruning practices.

HOR-145 Turf Installation & Maintenance
3 credits, Spring
3 class, 1 lab hour/week

Installation and maintenance of turf grasses commonly used in landscape construction. Emphasizes select cultural practices, irrigation, weed and pest identification and control.

HOR-146 Fruit Tree Short Course
1 credit, Spring
15 class hours/term

Tree fruit recommendations for the Willamette Valley will be presented. Orchard bloom time, pruning, training, tree fruit insects and diseases, asexual propagation, harvesting, storage and uses of tree fruit will be discussed.

HOR-211 Native Plant Identification
1 credit, Summer
10 class hours/term

Identification and use of plants native to the Pacific Northwest and the use of plant keys.

**HOR-212 Flower Arranger's Garden/
Fall**

3 credits, Fall

3 class, 1 lab hour/week

Specializes in flower arranging using seasonal varieties of plants grown in the garden. Floral arrangements will be modern and contemporary and use modern and contemporary containers. Cultural techniques for growing suitable varieties will be covered.

**HOR-213 Computer-Aided Landscape
Design**

3 credits, Winter

4 class hours/week

Development of skills with LandCadd software and its use in landscape design. Computer-aided design (CAD) techniques needed to produce finished landscape designs, plant lists, and reports. Prerequisite: Pass CS-090 & pass HOR-229.

HOR-215 Herbaceous Perennials

3 credits, Summer

4 class hours/week

The identification, propagation, selection and garden culture as well as individual attributes of herbaceous perennial plants, including the evolution of perennial garden design and current gardening styles. **Oregon State University transfer course.**

HOR-220 Plant Propagation/Fall

3 credits, Fall

3 class, 1 lab hour/week

Proper techniques for reproducing plants from seeds, cuttings, and grafting. Emphasis on seasonal plant production. (See also HOR-233 & HOR-242.)

**HOR-222 Horticultural Computer
Applications [C]**

2 credits, Fall/Winter

20 class hours/term

Utilizes database, spreadsheet, word-processing, and other computer programs for record keeping and management for growers and landscape businesses. Meets computer literacy requirement. **Oregon State University transfer course.** Prerequisite: Pass CS-090.

HOR-223 Flower Arranging

3 credits, Fall

3 class, 1 lab hour/week

Development of skills in designing table arrangements using cut flowers, artificial, and dried flowers.

HOR-224 Landscape Installation

3 credits, Fall

3 class, 1 lab hour/week

Materials and practices in landscape installation, including plan reading, materials take-off, estimating, bidding, scheduling, grading, construction materials, and plant installation.

HOR-225 Principles of Arboriculture

3 credits, Fall

3 class hours/week

Management of trees in landscape, including residential, commercial, and urban settings, following course materials prepared by the International Society of Arboriculture. Students study the value of trees, including ways that trees enhance the physical, aesthetic, economic, and psychological experiences of people. Preparation for the ISA Certified Arborist Exam.

HOR-226 Plant Identification/Fall

3 credits, Fall

3 class, 1 lab hour/week

Identification of deciduous trees, shrubs, and groundcovers, including their cultural requirements in the landscape. **Oregon State University transfer course.**

HOR-227 Plant Identification/Winter

3 credits, Winter

3 class, 1 lab hour/week

Identification of conifers and broadleaved evergreens, shrubs, and groundcovers, including their cultural requirements in the landscape. **Oregon State University transfer course.**

HOR-228 Plant Identification/Spring

3 credits, Spring

3 class, 1 lab hour/week

Identification of flowering trees, shrubs, and groundcovers, including their cultural requirements in the landscape. **Oregon State University transfer course.**

HOR-229 Basic Landscape Design

3 credits, Fall

3 class, 1 lab hour/week

Introduction to landscape planning, including basic drafting skills, grading, drainage, and site planning.

**HOR-230 Equipment Operation &
Maintenance**

3 credits, Winter

3 class, 1 lab hour/week

Selection, operation, and maintenance of power driven machines, such as mowers, rototillers, chain saws, edgers, sprayers, tractors, and related equipment for nursery and landscape applications.

HOR-231 Irrigation/Drainage Design

3 credits, Fall/Winter

3 class, 1 lab hour/week

Design of irrigation and drainage systems for various situations, including underground and above-ground, residential and commercial systems.

HOR-232 Commercial Floral Design

3 credits, Winter

3 class, 1 lab hour/week

Creating specific floral pieces including corsages, wedding and funeral arrangements using cut flowers, artificial, and dried flowers.

HOR-233 Plant Propagation/Winter

3 credits, Winter

3 class, 1 lab hour/week

Proper techniques for reproducing plants using cuttings, grafting, and division. Emphasis on seasonal plant production. (See also HOR-220 & HOR-242.)

HOR-234 Intermediate Landscape Design

3 credits, Winter

3 class, 1 lab hour/week

Further skill development in drawing, site analysis, and design, including two, three, and four dimensional design concepts. Graphic exercises and model making skills will be included as well as the study of creative and practical solutions for various site and program requirements of commercial and residential landscape sites. **Oregon State University transfer course.**

HOR-235 Weed Identification

2 credits, Fall

20 class hours/term

Identification and life cycles of weeds commonly found in landscapes and nurseries. Up to 15 recertification credits may be granted by the Oregon Department of Agriculture toward pesticide license renewal.

HOR-236 Insect Identification

2 credits, Fall

20 class hours/term

Identification and life cycles of insects which damage ornamental plants in greenhouses, landscapes, and nurseries. Up to 15 recertification credits may be granted by the Oregon Department of Agriculture toward pesticide license renewal.

HOR-237 Disease Identification

2 credits, Winter
20 class hours/term

Identification of ornamental plant diseases which occur in greenhouses, landscapes, and nurseries. Up to 15 recertification credits may be granted by the Oregon Department of Agriculture toward pesticide license renewal.

HOR-238 Landscape Business Operations

3 credits, Winter
3 class hours/week

Includes business practices, management, organizational structures of landscape business, and application of practices to develop or manage a landscape business.

HOR-239 Tree Climber Training

2 credits, Winter
24 class hours/term

The safe use of rope and saddle tree climbing procedures will be covered through lecture, discussion, and field practice.

HOR-240 Irrigation/Drainage Practices

3 credits, Spring
3 class, 1 lab hour/week

Materials, equipment, and methods used to install irrigation systems in landscape areas. Emphasis on home lawns, gardens, and larger areas, including drainage methods for improved performances.

HOR-241 Nursery Management

3 credits, Spring
3 class hours/week

Essentials of nursery practices, including containers and field growing practices, crop scheduling, management, and marketing.

HOR-242 Plant Propagation/Spring

3 credits, Spring
3 class, 1 lab hour/week

Proper techniques for reproducing plants from seed, cuttings, division, and micro-propagation. Emphasis on seasonal plant production. (See also HOR-220 & HOR-233.)

HOR-243 Tree & Shrub Pruning/Spring

3 credits, Spring
3 class, 1 lab hour/week

Pruning of woody ornamentals, including trees, shrubs, vines, and groundcovers. Emphasis on pruning of spring flowering ornamentals and training new growth.

HOR-244 Environmental Landscape Design

3 credits, Spring
3 class, 1 lab hour/week

Design of landscapes to develop ecosystems using plants to encourage wildlife and low maintenance. Includes the proper use and installation of wildlife food plants and various water habitats.

HOR-245 Advanced Landscape Design

3 credits, Spring
3 class, 1 lab hour/week

Advanced skill development in drawing, site analysis, and design, including commercial and residential landscapes meeting professional standards. **Oregon State University transfer course.**

HOR-246 Organic Gardening

3 credits, Spring
3 class, 1 lab hour/term

Philosophy, writers, principles and practices of organic gardening. Organic gardening techniques appropriate to the maritime Pacific Northwest.

HOR-247 Hardscape Installation

3 credits, Spring
3 class, 1 lab hour/week

Materials and construction methods used in landscape hardscape development with emphasis placed on design, materials selection, construction and maintenance of hardscape features for walls, patios, lighting, fencing, decks, and water features.

HOR-248 Flower Arrangers Garden/Spring

3 credits, Spring
3 class, 1 lab hour/week

Specializes in flower arranging using seasonal varieties of plants grown in the garden. Floral arrangements will be modern and contemporary and use modern and contemporary containers. Cultural techniques for growing suitable varieties will be covered.

HOR-250 Western Herbal Medicine

1 credit, Spring
12 class hours/term

This course introduces botanical medicine with a focus on herbs that can be grown locally. Instruction will focus on the components and medicinal uses of herbs. The class will make teas for respiratory infections, digestion, and steam treatments.

HOR-251 Herbal Medicine Making

1 credit, Spring
12 class hours/term

Instruction will be provided in making medicinal teas, skin salve, tincture, infused oil, medicinal vinegar and cough syrup. Covers what ingredients to use and why each is important.

HOR-252 Kitchen Medicine

1 credit, Spring
12 class hours/term

Instruction will focus on how to use common foods, herbs, spices, and water as medicine. This is a practical course to maintain health with resources at hand.

HOR-280 Horticulture/CWE

3 credits, Fall/Winter/Spring/Summer
1.5 class, 10 job site hours/week

Cooperative work experience. On-the-job experience in the various segments of horticulture. Students enroll in co-op after completing nine credits of horticulture courses. Required: A CWE seminar.

HOR-281 Horticulture/CWE

6 credits, Fall/Winter/Spring/Summer
1.5 class, 19 job site hours/week

Cooperative work experience. On-the-job experience in the various segments of horticulture. Students enroll in co-op after completing nine credits of horticulture courses. Required: A CWE seminar.

HOR-282 Horticulture/CWE

3 credits, Fall/Winter/Spring/Summer
1.5 class, 10 job site hours/week

Cooperative work experience. On-the-job experience in the various segments of horticulture. Students enroll in co-op after completing nine credits of horticulture courses. This class is available to students in the Horticulture program who wish to use co-op as an elective credit. Required: A CWE seminar.

HS

Courses with this prefix may not transfer with credit to a four-year institution unless applied as part of the 12 allowable professional technical credits for the AAOT or ASOT-Business.

Human Services/ Gerontology

HS-100 Introduction to Human Services 3 credits, Fall

3 class hours/week

Student will examine interpersonal skills, personal values, decisions and problems for human service trainees. The struggles, stress, demands, strains and rewards of working in this field will be addressed. Required for Human Services degree.

HS-120 Basic Caregiver Training

4 credits, Fall/Winter/Spring/Summer
2 week class/6 days

A 43-hour basic training course for those who provide direct care to frail elderly and disabled persons in a variety of care settings including Adult Foster Homes, Assisted Living, and home care. Enrollment open to anyone interested in aging issues and elder care.

HS-130 Introduction to Hospice Care

2 credits, not offered every term
5 class hours/week

For individuals, families, and professionals interested in learning about hospice care for the terminally ill. Issues include death, dying, and bereavement, with attention to psycho-social need, pain and symptom control, delivery of medical care, family dynamics, and philosophical and ethical questions. Required to become a Hospice Volunteer.

HS-154 Community Resources

3 credits, Winter
3 class hours/week

Explores local community social service resources, types of services, eligibility criteria, mission, policies, politics, service delivery systems of agencies, identification of client needs, and referral processes, historical, political and social trends.

HS-155 Support Seniors in Community

3 credits, not offered every term
3 hours/week, 10 weeks

For housing managers, volunteers, and professionals who work with seniors in the community. Obtain resource information and tools you will need to enhance your skills in dealing with the elderly on a daily basis.

HS-165 Activity Director

3 credits, Fall
3 class hours/week

Provides training for activity directors in long-term care facilities. Focuses on therapeutic activities and the appropriate use of people and material resources to promote continual growth and development in long-term residents.

HS-170 Field Experience in Human Services

3 credits, Spring
3 class hours/week

Exploration of Human Services in the workplace and organizations, including work stress, supervision, ethics, cultural diversity, and social responsibility. Prerequisite to Human Services practicum courses. Requirement for Human Services degree.

HS-280 Gerontology/CWE

3-6 credits, Spring
1 class, 15 lab hours/week

Cooperative work experience. On-the-job experience to acquaint gerontology students with the roles and related activities of organizations serving the elderly. This is an opportunity to evaluate the practice theories and techniques learned in the classroom. Required: Instructor consent & a CWE seminar.

HS-280 Human Services Generalist I/CWE

4 credits, Fall
12 field experience hours/week

Cooperative work experience. Supervised experience in human services including but not limited to: early childhood care, criminal/juvenile justice; gerontology, social service and other related occupations. Prerequisite: HS-170 Introduction to Field Experience. Required: Instructor consent.

HS-281 Human Services Generalist II/CWE

4 credits, Winter/Spring
12 field experience hours/week

Cooperative work experience level II. Supervised experience in human services including but not limited to: early childhood care, criminal/juvenile justice; gerontology, social service and other related occupations. Prerequisite: HS-170 Introduction to Field Experience. Required: Instructor consent.

HS-282 Human Services Generalist III/CWE

4 credits, Winter/Spring
12 field experience hours/week

Cooperative work experience level III. Supervised experience in human services including but not limited to: early childhood care, criminal/juvenile justice; gerontology, social service and other related occupations. Prerequisite: HS-170 Introduction to Field Experience. Required: Instructor consent.

HST

History

HST-101 History of Western Civilization

4 credits, Fall/Winter
4 class hours/week

Origins and development of western civilization from ancient times to the 1300s. Meets the social science requirement for the AAOT degree. Also offered as a telecourse. Recommended: Placement in RD-115.

HST-102 History of Western Civilization

4 credits, Winter/Spring
4 class hours/week

Origins and development of western civilization from the Renaissance to the 1800s. Meets the social science requirement for the AAOT degree. Also offered as a telecourse. Recommended: Placement in RD-115.

HST-103 History of Western Civilization

4 credits, Fall/Spring
4 class hours/week

Origins and development of western civilization in the 19th and 20th centuries. Meets the social science requirement for the AAOT degree. Also offered as a telecourse. Recommended: Placement in RD-115.

HST-121 Readings in European History
4 credits, Fall
4 class hours/week

Independent readings in European History from ancient times to ca. 1300. Meets the social science requirement for the AAOT degree. Recommended: Placement in RD-115. Prerequisite: Pass HST-101.

HST-122 Readings in European History
4 credits, Winter
4 class hours/week

Independent readings in European History from 1300 to 1800. Meets the social science requirement for the AAOT degree. Recommended: Placement in RD-115. Prerequisite: Pass HST-102.

HST-123 Readings in European History
4 credits, Spring
4 class hours/week

Independent readings in European History from 1800 to the present. Meets the social science requirement for the AAOT degree. Recommended: Placement in RD-115. Prerequisite: Pass HST-103.

HST-201 History of the United States
4 credits, Fall
4 class hours/week

Covers the period from early discovery to the Age of Jackson. Meets the social science requirement for the AAOT degree. Recommended sequence be taken in order. Also offered as a telecourse. Recommended: Placement in RD-115.

HST-202 History of the United States
4 credits, Winter
4 class hours/week

Covers the period from the Age of Jackson to World War I. Meets the social science requirement for the AAOT degree. Recommended sequence be taken in order. Also offered as a telecourse. Recommended: Placement in RD-115.

HST-203 History of the United States
4 credits, Spring
4 class hours/week

Covers the period since WWI. Meets the social science requirement for the AAOT degree. Recommended sequence be taken in order. Also offered as a telecourse. Recommended: Placement in RD-115.

HST-238 History of Oregon
4 credits, Fall
4 class hours/week

Survey of history from the earliest days of exploration through the establishment of Portland and the economics of the 1880s. Emphasis on Lewis and Clark, founding of Astoria, era of the missionaries, Oregon Trail, and attainment of Statehood. Meets the social sciences requirement for the AAOT degree. Recommended: Placement in RD-115.

HST-239 History of Oregon
4 credits, Winter
4 class hours/week

Survey of history from the 1880s to the present. Emphasis on progressive legislation, women's suffrage, and economic development of the state. Tom McCall and his legacy, and the implications for current issues in politics. Meets the social science requirement for the AAOT degree. Recommended: Placement in RD-115.

HST-280 History/CWE
2-6 credits
Fall/Winter/Spring/Summer
1.5 class, 6-18 job site hours/week

Cooperative work experience. Provides students with on-the-job work experience in the field of history. Required: Instructor consent & a CWE seminar.

HTM

Courses with this prefix may not transfer with credit to a four-year institution unless applied as part of the 12 allowable professional technical credits for the AAOT or ASOT-Business.

Hospitality & Tourism Management

All HTM courses are HOSTED online through Chemeketa Community College and are not offered every term.

HTM-100 Introduction to the Hospitality Industry
3 credits, Fall
33 online hours/term

Distance Learning: Online. Introduces the student to the hospitality industry. Defines the hospitality industry as a single, interrelated industry composed of food and beverage, travel and tourism, lodging, meeting and planning, and recreation, recreational entertainment, eco and heritage tourism.

HTM-102 Hotel, Restaurant and Travel Law
3 credits, Winter
3 class hours/term

Distance Learning: Online. Legal aspects of the hospitality and tourism industry: Americans with Disabilities Act, sexual harassment and discrimination, civil rights issues, basic court procedures, contract law, negligence, guest relationship obligations, alcohol liability, travel agent relationships, and licensing and regulations.

HTM-103 Marketing in the Hospitality Industry
3 credits, Spring
3 class hours/week

Distance Learning: Online. Learn marketing techniques and analyze industry specific marketing strategies. Covers products, services, and sales conditions within the industry.

HTM-104 Introduction to the Travel and Tourism Industry
3 credits, not offered every term
3 class hours/week

Distance Learning: Online. Promotes understanding and knowledge of the diverse elements that comprise the travel and tourism industry and the factors that influence growth and development. Examples of tourism development practices utilized in Oregon will be used.

HTM-105 Introduction to the Food and Beverage Industry
3 credits, not offered every term
3 class hours/week

Distance Learning: Online. Overview of the food industry, its structure, organization, size, economic impact, regulatory industries and peripheral industries; managerial problems and practices; and trade journals and resources, with a broad review of the various food service segments.

HTM-106 Introduction to the Lodging Industry

3 credits, not offered every term
3 class hours/week

Distance Learning: Online. Learn about the lodging industry's structure, size, and scope; managerial practices, human resources, accounting and budgeting; structure and organization within individual properties. Covers front office procedures and explore career opportunities.

HTM-107 Sanitation and Safety for Managers

3 credits, not offered every term
3 class hours/week

Distance Learning: Online. Covers current principles and practices of safety and sanitation management; Hazard Analysis Critical Control Point (HACCP) system, water and waste systems, and hazardous materials. A national certificate is issued upon completion by NRA.

HTM-111 Cultural Heritage Tourism

3 credits, not offered every term
3 class hours/week

Distance Learning: Online. An overview course designed to explore the subject of cultural heritage tourism and the value of this niche market.

HTM-112 Bed and Breakfast Operations

3 credits, not offered every term
3 class hours/week

Distance Learning: Online. Explores the subject of the bed and breakfast and innkeeping industry. Discusses the realities of purchasing, owning and operating a successful inn. Topics will explore design, financing, operations, food service and sanitation, marketing and governmental regulations.

HTM-119 Introduction to Casino Management

3 credits, not offered every term
3 class hours/week

Distance Learning: Online. The history and culture of gaming, gaming trends in the U.S., casino hotel organizational structure, government regulation, and casino games and Native American casinos. Practices and problems associated with casino management including staffing, controls, credit, security, marketing and entertainment.

HTM-123 Computer Reservation Systems

3 credits, not offered every term

3 class hours/week

Distance Learning: Online. Utilizes various computer reservation systems to train students for successful employment in a travel agency. Display available flights, auto rentals, lodging and accommodations, and other related travel information. Solving practical problems that travel agents encounter in the workplace.

HTM-126 Meeting & Event Planning

3 credits, not offered every term

3 class hours/week

Distance Learning: Online. Management and operations of the convention and meetings market. Introduction to the meetings industry, promotional activities, negotiations for meeting services, convention market salesmanship, customer service, and convention servicing. Facilities, technology and media are discussed.

HTM-127 Travel Sales & eCommerce

3 credits, not offered every term

3 class hours/week

Distance Learning: Online. Applies concepts and techniques to sample sales dialogues, examples and case studies. The impact of the Internet and e-commerce trends and the functionality of travel e-commerce sites. How e-commerce travel sites integrate with Global Distribution Systems.

HUM***Humanities*****HUM-150 The Columbia Basin:**

Watershed of the Great Northwest [C]

5 credits, Fall

5 class hours/week

The Columbia River watershed dominates the culture and economy of the Pacific Northwest, past, present, and future. This course explores the Columbia River Basin and its natural and human history. Includes field trips. Meets the arts & letters requirement for the AAOT degree and the University Studies Freshman Inquiry requirement at PSU. Meets computer literacy requirement. Recommended: Placement in RD-115.

HUM-151 The Columbia Basin:

Watershed of the Great Northwest [C]

5 credits, Winter

5 class hours/week

The Columbia River is the largest river in the western United States. This course focuses on management of the Columbia River Basin and its resources, with Portland as the metropolis of the watershed. Includes field trips. Meets the arts & letters requirement for the AAOT degree and the University Studies Freshman Inquiry requirement at PSU. Meets computer literacy requirement. Prerequisite: Pass SSC-150.

HUM-152 The Columbia Basin:

Watershed of the Great Northwest [C]

5 credits, Spring

5 class hours/week

Issues and opportunities associated with the Columbia River watershed are of immediate importance. This course grapples with the future of the Columbia River Basin and the living organisms (including humans) dwelling in it. Includes field trips. Meets the arts & letters requirement for the AAOT degree and the University Studies Freshman Inquiry requirement at PSU. Meets computer literacy requirement. Prerequisite: Pass SSC-151.

HUM-160 Faith & Reason [C]

5 credits, Fall

5 class hours/week

Introduction to classical philosophy, sacred texts, modern fiction, poetry, theology, evolutionary biology, and cosmology. Consideration of how personal concepts of faith and reason and institutions of science and religion, shape personal intellectual landscapes. Meets the arts & letters requirement for the AAOT degree and the University Studies Freshman Inquiry requirement at PSU. Meets computer literacy requirement. Recommended: Placement in RD-115.

HUM-161 Faith & Reason [C]

5 credits, Winter
5 class hours/week

Introduction to classical philosophy, sacred texts, modern fiction, poetry, theology, evolutionary biology, and cosmology. Consideration of how personal concepts of faith and reason and institutions of science and religion, shape personal intellectual landscapes. Meets the arts & letters requirement for the AAOT degree and the University Studies Freshman Inquiry requirement at PSU. Meets computer literacy requirement. Prerequisite: Pass SSC-160.

HUM-162 Faith & Reason [C]

5 credits, Spring
5 class hours/week

Introduction to classical philosophy, sacred texts, modern fiction, poetry, theology, evolutionary biology, and cosmology. Consideration of how personal concepts of faith and reason and institutions of science and religion, shape both personal intellectual landscapes. Meets the arts & letters requirement for the AAOT degree and the University Studies Freshman Inquiry requirement at PSU. Meets computer literacy requirement. Prerequisite: Pass SSC-161.

HUM-170 Metamorphoses [C]

5 credits, not offered every year
3 class hours/week + 2 hours/week
TBA

Investigates the process of change within human cultures and individuals. By exploring myth, science, art, religion, and literature, we approach a better understanding of the ability of humans to change. Meets the arts & letters requirement for the AAOT degree and the University Studies Freshman Inquiry requirement at PSU. Meets computer literacy requirement. Recommended: Placement in RD-115 & placement in WR-121.

HUM-171 Metamorphoses [C]

5 credits, not offered every year
3 class hours/week + 2 hours/week
TBA

Explores the effect of change on individuals and societies. Helps students evaluate the probable success of various means of promoting personal, social/cultural/political, and paradigmatic change through readings in Darwin, Marx, Gandhi, and Kafka. Meets the arts & letters requirement for the AAOT degree and the University Studies Freshman Inquiry requirement at PSU. Meets computer literacy requirement. Recommended: Placement in RD-115 & placement in WR-121.

HUM-172 Metamorphoses [C]

5 credits, not offered every year
3 class hours/week + 2 hours/week
TBA

Explores, analyzes, and evaluates the changes occurring now. Through independent study, peer instruction, website and digital portfolio development, students will examine the intersections of cultural, social, individual, religious, paradigmatic shifts happening in our own lifetimes. Meets the arts & letters requirement for the AAOT degree and the University Studies Freshman Inquiry requirement at PSU. Meets computer literacy requirement. Recommended: Placement in RD-115 & placement in WR-121.

HUM-180 Pathway to Sustainability

5 credits, not offered every year
5 class hours/week

Can we create a more sustainable and just world? We will question our assumptions regarding economic models, democracy, our relationships with the environment, and social structures? What are the roots of the current ecological crisis? Meets the arts & letters requirement for the AAOT degree and the University Studies Freshman Inquiry requirement at PSU. Recommended: Placement in RD-115.

HUM-181 Pathway to Sustainability

5 credits, not offered every year
5 class hours/week

Can we create a more sustainable and just world? How do socially meaningful changes come about? What are the ecological and social repercussions of the choices we make? Are ecological and social justice concerns linked? Meets the arts & letters requirement for the AAOT degree and the University Studies Freshman Inquiry requirement at PSU. Recommended: Placement in RD-115.

HUM-182 Pathway to Sustainability

5 credits, not offered every year
5 class hours/week

Can we create a more sustainable and just world? What can our personal roles in change be? How can we stimulate local sustainable economies? What analysis is useful in assessing ecological impacts? Meets the arts & letters requirement for the AAOT degree and the University Studies Freshman Inquiry requirement at PSU. Recommended: Placement in RD-115.

HUM-190 Human Nature

5 credits, not offered every year
5 class hours/week

This course explores the complex connections between humans and nature and specifically asks, "What is human nature?" We will look at humans as biological organisms, language speakers, constructors and constructions of society and culture. Meets the arts & letters requirement for the AAOT degree and the University Studies Freshman Inquiry requirement at PSU. Recommended: Placement in RD-115.

HUM-191 Human Nature

5 credits, not offered every year
5 class hours/week

Explores the complex connections between humans and nature. How have we described and represented nature to ourselves? How have humans over the course of time understood themselves and interacted with the natural world? Meets the arts & letters requirement for the AAOT degree and the University Studies Freshman Inquiry requirement at PSU. Recommended: Placement in RD-115.

HUM-192 Human Nature

5 credits, not offered every year
5 class hours/week

Explores the complex connections between humans and nature. How have our understandings of nature and human nature changed? Do humans have unique responsibilities toward the natural world and, if so, what are they? Meets the arts & letters requirement for the AAOT degree and the University Studies Freshman Inquiry requirement at PSU. Recommended: Placement in RD-115.

HUM-220 Modern War in American Popular Culture

4 credits, not offered every term
4 class hours/week

Emphasizes observation, reflection, description, and critical thinking in order to gain a deeper understanding of the war in Vietnam and the Gulf War as seminal events represented in American popular culture. Meets the arts & letters requirement for the AAOT degree and the University Studies Sophomore Inquiry requirement at PSU. Recommended: Placement in RD-115 & placement in WR-121.

HUM-221 Science in American Popular Culture

4 credits, not offered every term
4 class hours/week

Emphasizes observations, reflection, description, and critical thinking in order to gain a deeper understanding of the development of evolutionary theory, catastrophe theory, and historical disasters as represented in American popular culture. Meets the arts & letters requirement for the AAOT degree and the University Studies Sophomore Inquiry requirement at PSU. Recommended: Placement in RD-115 & placement in WR-121.

HUM-222 Civil Rights in American Popular Culture

4 credits, not offered every term
4 class hours/week

Emphasizes observation, reflection, description, and critical thinking in order to gain a deeper understanding of civil rights history as represented in American popular culture and the ways in which concepts of civil rights have expanded. Meets the arts & letters requirement for the AAOT degree and the University Studies Sophomore Inquiry requirement at PSU. Recommended: Placement in RD-115 & placement in WR-121.

HUM-223 The Humanistic Tradition

4 credits, not offered every year
4 class hours/week

Multi-disciplinary examination of major issues and topics from prehistory through the middle ages including perspectives from anthropology, history, art, literature, philosophy, religion, and science. Meets the arts & letters requirement for the AAOT degree and the University Studies Sophomore Inquiry requirement at PSU. Recommended: Placement in RD-115.

HUM-224 The Humanistic Tradition

4 credits, not offered every year
4 class hours/week

Multi-disciplinary examination of major issues and topics from the Renaissance Enlightenment from anthropology, history, art, literature, philosophy, religion, and science. Meets the arts & letters requirement for the AAOT degree and the University Studies Sophomore Inquiry requirement at PSU. Recommended: Placement in RD-115.

HUM-225 The Humanistic Tradition

4 credits, not offered every year
4 class hours/week

Multi-disciplinary examination of major issues and topics from 19th & 20th centuries including perspectives from anthropology, history, art, literature, philosophy, religion, and science. Meets the arts & letters requirement for the AAOT degree and the University Studies Sophomore Inquiry requirement at PSU. Recommended: Placement in RD-115.

HUM-226 Science & Religion

4 credits, not offered every term
4 class hours/week

Examines different aspects of science and religion and how scientific inquiry affects beliefs. Discusses the historical development of astronomy, cosmology, physics, biology, and theology. Investigates the current state of questions in religion and science. Meets the arts & letters requirement for the AAOT degree and the University Studies Sophomore Inquiry requirement at PSU. Recommended: Placement in RD-115 & placement in WR-121.

HUM-227 Civil War & Psychology

4 credits, not offered every term
4 class hours/week

Explores causes and effects of the Civil War, with a special emphasis on social, cultural, and economic factors. Analyzes the character and personality of civilian and military leaders of both the North and South. Meets the arts & letters requirement for the AAOT degree and the University Studies Sophomore Inquiry requirement at PSU. Recommended: Placement in RD-115 & placement in WR-121.

HUM-228 The Renaissance

4 credits, not offered every term
4 class hours/week

Students gain insight into its influence on architecture, emphasis upon development of individual personality, confidence in the power of formal education, belief in citizens' participation in public life, and the rise of scientific inquiry. Meets the arts & letters requirement for the AAOT degree and the University Studies Sophomore Inquiry requirement at PSU. Recommended: Placement in RD-115 & placement in WR-121.

HUM-229 Latin American Studies

4 credits, not offered every term
4 class hours/week

Survey and analysis of Latin America from pre-colonization to the modern era. Focuses on the political, social, cultural, and economic structure of Latin America. Discusses race and class relations, imperialism, revolution, neo-colonialism, and dependency theory. Meets the arts & letters requirement for the AAOT degree and the University Studies Sophomore Inquiry requirement at PSU. Recommended: Placement in RD-115 & placement in WR-121.

HUM-230 Gender & Material Culture

4 credits, not offered every term
4 class hours/week

Provides in-depth study of social and cultural significance of material culture as it applies to gender, within a historical context. Focuses is on the material world of American society from the colonial era to present. Meets the arts & letters requirement for the AAOT degree and the University Studies Sophomore Inquiry requirement at PSU. Recommended: Placement in RD-115 & placement in WR-121.

HUM-231 Engendered Identities
4 credits, not offered every term
4 class hours/week

Examines the various perspectives on the development of gender identities and looks specifically at the ways in which concepts of femininity and masculinity have shaped cultural images, identities and experiences cross-culturally, globally and historically. Meets the arts & letters requirement for the AAOT degree and the University Studies Sophomore Inquiry requirement at PSU. Recommended: Placement in RD-115 & placement in WR-121.

HUM-232 Women in American History
4 credits, not offered every term
4 class hours/week

Explores changing roles of women in American history. Emphasis on concepts of separate spheres, public/private realms, development of women's rights, role of women in reform and social movements, and women's roles and experiences across race and class. Meets the arts & letters requirement for the AAOT degree and the University Studies Sophomore Inquiry requirement at PSU. Recommended: Placement in RD-115 & placement in WR-121.

HUM-233 Electronic Culture [C]
4 credits, not offered every term
4 class hours/week

An introduction to the interdisciplinary field of electronic culture, focusing on the use of electronic computer technology by individuals and groups. Examines transformation of self, identity, communication, and development of electronic communities and subcultures. Meets the arts & letters requirement for the AAOT degree and the University Studies Sophomore Inquiry requirement at PSU. Recommended: Placement in RD-115 & placement in WR-121.

HUM-234 Freedom, Privacy and Technology [C]
4 credits, not offered every term
4 class hours/week

Investigation of how the development of computer based technologies is transforming the notion of privacy, anonymity, and individual freedom. Explores social impact of knowledge and data gathering techniques, surveillance, mass marketing, and commercialization of online world. Meets the arts & letters requirement for the AAOT degree and the University Studies Sophomore Inquiry requirement at PSU. Recommended: Placement in RD-115 & placement in WR-121.

J *Journalism*

J-134 Photojournalism
3 credits, Fall/Spring
3 class hours/week

Emphasizes composition, lighting, and weather conditions, and creative ways to illustrate a story. Weekly shooting assignments. Meets the arts & letters requirement for the AAOT degree. Recommended: Basic photography skills.

J-211 Mass Media & Society
3 credits, Spring
3 class hours/week

Introductory class provides an understanding of the development and operations of media. Includes discussion of newspapers, magazines, electronic media and advertising, and public relations. Meets the arts & letters requirement for the AAOT degree. Required for journalism majors at the University of Oregon. Recommended: Placement in RD-115.

J-215 Publications Lab [C]
1 credit, Fall/Winter/Spring
3 lab hours/week

Provides opportunity to work on student publications in areas of writing, photography, editing, production, or advertising. Meets the arts & letters requirement for the AAOT degree. Meets computer literacy requirement.

J-216 Reporting [C]
3 credits, Fall/Winter/Spring
3 class hours/week

Introduces the student to the fundamentals of journalism: news gathering, newspaper style, interviewing, lead writing, news writing and the laws of libel. Meets the arts & letters requirement for the AAOT degree. Meets computer literacy requirement. Prerequisite: Placement in WR-121 or pass WR-095.

J-218 Editing & Design [C]
3 credits, Winter
3 class hours/week

Instruction in copy editing, headline writing, page design, layout, and desktop publishing. Meets the arts & letters requirement for the AAOT degree. Meets computer literacy requirement.

J-226 Electronic Newspaper Production [C]
3 credits, Fall/Winter/Spring
3 class hours/week

Weekly production of The Clackamas Print, the college newspaper. Students participate in an afternoon lab, producing design, layout and paste-up of the paper using desktop publishing. Meets the arts & letters requirement for the AAOT degree. Meets computer literacy requirement.

J-280 Journalism/Public Relations/CWE
2-6 credits, Fall/Winter/Spring
1.5 class, 6-18 job site hours/week

Cooperative work experience. Provides students with on-the-job experience and training related to journalism. Required: Instructor consent & a CWE seminar.

MA

Courses with this prefix may not transfer with credit to a four-year institution unless applied as part of the 12 allowable professional technical credits for the AAOT or ASOT-Business.

Medical Assistant

MA-110 Medical Terminology
3 credits, Fall/Winter/Spring/Summer
3 class hours/week

Understanding and effectively communicating with other health care professionals. Includes pronunciation, spelling, and meaning of words. Introduction to pathophysiology/disease processes.

MA-112 Medical Office Practice

4 credits, Fall
4 class hours/week

Fundamental information pertaining to the ambulatory care setting. Examines medical law and bioethics and introduces students to the administrative and transdisciplinary skills/competencies of a Medical Assistant. Required: Instructor consent.

MA-115 Phlebotomy

1 credit, Spring/Summer
1 class, 1 lab hour/week

Develops basic understanding and application of blood specimen collection and handling techniques used in the ambulatory care setting and hospital laboratory setting. Required: Instructor consent.

MA-116 Introduction to Medications

2 credits, Winter
2 class hours/week

Medications commonly administered in the ambulatory care setting. Legal aspects of administering medications as well as therapeutic and adverse outcomes of medications. Principles of preparing and administration of oral and parenteral medications. Required: Instructor consent. Prerequisite or corequisite: MTH-054.

MA-117 Clinical Lab Procedures I

2 credits, Winter
2 class, 1 lab hours/week

Introduces common laboratory procedures and terminology used in the ambulatory care setting. Restricted to Medical Assistant students who have completed fall term requirements.

MA-118 Examination Room Techniques

3 credits, Winter
2 class, 3 lab hours/week

Fundamental information pertaining to the ambulatory care setting. Examines office procedures including medical asepsis, vital signs, physical exams including documentation, special exams and procedures and introduces students to the clinical and transdisciplinary skill/competencies of a Medical Assistant. Required: Instructor consent. Prerequisite: Pass BI-055, pass MA-110 & pass MA-112.

MA-119 Medical Assistant Practicum I

4 credits, Winter
2 class, 9 lab hours/week

Supervised unpaid assignment in the ambulatory care setting to gain administrative experience. May not be challenged. Restricted to Medical Assistant students who have completed fall term requirements. Corequisites: MA-116 & MA-118.

MA-120 Medical Assistant Practicum II

6 credits, Spring
2 class, 12 lab hours/week

Supervised unpaid assignment in the ambulatory care setting to gain clinical experience. May not be challenged. Restricted to Medical Assistant students who have completed fall and winter term requirements. Corequisites: MA-115, MA-121 & MA-125.

MA-121 Clinical Lab Procedures II

2 credits, Spring
2 class, 1 lab hours/week

Continuation of common laboratory procedures used in the ambulatory care setting. May not be challenged. Restricted to Medical Assistant students. Prerequisite: Pass MA-117.

MA-125 Fundamentals of Human Development

3 credits, Spring
3 class hours/week

Human development across the lifespan. Includes bio-psycho-social aspects.

MA-145 Medical Coding & Health Information Management

3 credits, Fall
3 class hours/week

ICD9/CPT coding, insurance and billing, accounts receivable and data management in the ambulatory care office. May not be challenged. Restricted to Medical Assistant students. This course will NOT meet the requirement for the Medical Office Administrative Assistant certificate.

MFG

Courses with this prefix may not transfer with credit to a four-year institution unless applied as part of the 12 allowable professional technical credits for the AAOT or ASOT-Business.

Manufacturing Technology

The Manufacturing Department has a variety of programs and classes. Most Manufacturing classes can be customized to meet the needs of industry. For additional information contact the Customized Training Department at ext. 3523.

MFG-047 Manufacturing Specialist I

10 credits, not offered every term
20 class hours/week

Workplace readiness course whereby students will gain an understanding of manufacturing processes through hands on experience. Topics may include: machining fundamentals, CNC machine operation and welding processes. Workplace success skills and interpersonal skills also covered. Corequisite: MFG-048.

MFG-048 Manufacturing Specialist II

10 credits, not offered every term
20 class hours/week

A continuation of MFG-047. Corequisite: MFG-047.

MFG-104 Print Reading

2 credits, Fall/Winter/Spring
2.5 class hours/week

Introduction to basic print reading. Students will use the principles of orthographic projection and current ASME standards as they apply this knowledge to interpreting manufacturing prints.

MFG-105 Dimensional Inspection

2 credits, Fall/Winter/Spring
2.5 class hours/week

Covers precision measuring tools such as micrometers, dial indicators, gauge blocks, sine bars and other instruments used in quality control of manufactured products.

MFG-106 Applied Geometric Dimensioning & Tolerancing for Manufacturing

3 credits, not offered every term
3 class hours/week

Introduces participants to the application of gauging and inspection using Geometric Dimensioning and Tolerancing. Students will identify inspection equipment and inspect GDT characteristics while experiencing their manufacturing implications.

MFG-107 Industrial Safety & OSHA

3 credits, Fall/Winter/Spring
3 class hours/week

Covers safety hazards and OSHA requirements in the workplace. Covers eye safety, grinding wheel hazards, electrical and chemical hazards, slips and falls, back injuries, and environmental regulations. Independent projects will be required.

MFG-109 Computer Literacy for Technicians [C]

3 credits, Fall/Winter/Spring
3.5 class hours/week

Presents the uses of computers in business and industry. Subjects covered include computer platforms, basic hardware, data communication, and operating systems. Reviews and uses word processing, spreadsheet, and database software for the PC. Meets computer literacy requirement.

MFG-110 Manufacturing Special Projects

1-9 credits, Fall/Winter/Spring

18 class hours/week

Allows students a great deal of latitude in project selection, design, and production utilizing manual machine tools, CNC machine tools, CAD/CAM and EDMs. A solid understanding of all basic machine tools is expected. Required: Instructor consent.

MFG-111 Machine Tool Fundamentals I

3-9 credits, Fall/Winter/Spring

18 class hours/week

Covers machine tool operations including drill presses, lathes, and milling machines. Includes internal and external threading, and introduction to CNC technology. Recommended: MFG-104 & MFG-107.

MFG-112 Machine Tool Fundamentals II

3-9 credits, Fall/Winter/Spring

18 class hours/week

Covers setup and operation of the vertical milling machine and boring techniques on the lathe. Surface grinding, selection of abrasive grinding wheels and introduction to CNC technology included. Recommended: MFG-111.

MFG-113 Machine Tool Fundamentals III

3-9 credits, Fall/Winter/Spring

18 class hours/week

Topics include offset boring heads, rotary tables, indexing devices, and taper attachments. Also covers applied technical math, inspection techniques, optical comparators, coordinate measuring machines, cylindrical grinding, and basic CNC technology. Recommended: MFG-111 & MFG-112.

MFG-124 Statistical Process Control

1-3 credits, Spring

3 class hours/week

Concepts and methods to organize and implement an ongoing quality improvement program. Integrates Dr. Demings management philosophy with problem solving and charting techniques. Covers x-bar, R and C charts, and capability analysis.

MFG-130 Basic Electricity I

3 credits, not offered every term

3 class hours/week

Explores fundamentals of AC and DC electricity. Includes: atomic structure, direct current, alternating current, Ohm's law, series, parallel, and combination circuits, DC circuit theorems, production of DC voltages, magnetic principles, transformers, motors and generators.

MFG-131 Basic Electricity II

3 credits, not offered every term

3 class hours/week

Covers application of several theories learned in previous term. Additional topics will include: motors, controls, alignment, pulleys and gears, troubleshooting theory, power distribution and lighting, electrical wiring and schematics. Recommended: MFG-130, MTH-060.

MFG-132 Basic Electricity III

3 credits, not offered every term

3 class hours/week

Study of the Oregon State Laws and Administrative rules and the National Electrical Code (NEC) in a practice test style format. Includes examination and test techniques. Recommended: MFG-130, MFG-131.

MFG-133 Programmable Logic Controllers

3 credits, Spring

3 class hours/week

A study of the basic skills necessary to program, install, and maintain industrial control systems utilizing programmable logic controllers. Course content lays a foundation of hardwired relay control systems and components then build on this for an understanding of programmable logic controllers (PLC) systems. Recommended: MFG-130.

MFG-140 Principles of Fluid Power

3 credits, not offered every term

6 class hours/week

Course provides student with instruction in the use of hydraulics and pneumatics in industry covering the fundamentals of hydraulics, basic components (valves, cylinders, pumps, motors, piping, fluid, fluid conditions, and accessories).

MFG-200 Introduction to CNC Programming

1 credit, not offered every term

4 class hours/week, 5 weeks

Short course designed to prepare students for further study in CNC programming. Covers fundamentals of G & M code programming by completing several CNC programs, using simulation software and by testing their programs on a vertical machining center. Recommended: MFG-111.

MFG-201 CNC I: Set-up & Operation

4 credits, Fall/Spring

7.5 class hours/week

"Hands-on" class will teach students how to set-up and operate CNC milling centers and will include an introduction to basic G&M-code programming. Designed for persons with little or no previous experience. Recommended: MFG-109, MFG-112, MTH-050.

MFG-202 CNC II: Programming & Operation

4 credits, Winter

7.5 class hours/week

Places a heavy emphasis on writing G&M-code. Students will be taught more advanced programming and operation of CNC milling centers and basic programming, set-up and operation of CNC turning centers. Recommended: MFG-201.

MFG-203 CNC III: Applied Programming & Operation

3 credits, Spring

6 class hours/week

Students work individually or in small groups to design, program, manufacture and test advanced projects using: CNC mills, CNC lathes, Electrical Discharge Machines and various software applications. Introduction to principles and operation of EDM included. Recommended: MFG-201 or MFG-204.

MFG-204 Computer-Aided Manufacturing I

4 credits, Fall

7.5 class hours/week

Introduction to computer-aided part programming. Students will use CAD/CAM software to generate NC code to produce machined products. Model creation, process verification, code generation, and CAD/CAM integration will be covered. Recommended: MFG-201 & MFG-112.

MFG-205 Computer-Aided Manufacturing II

4 credits, Winter

7.5 class hours/week

Continuation of CAM I. Includes instruction in Mastercam surfaces and lathe and solid modeling software. Emphasis on hands-on manufacturing activities. Additional topics might include reverse engineering, automation, robotics and motion control. Recommended: MFG-204

MFG-206 Computer-Aided Manufacturing III

2 credits, Spring

4 class hours/week

Final class in the Computer-Aided Manufacturing series will concentrate on a capstone project. Students will design, program, and fabricate an industrial caliber independent project. Recommended: MFG-205.

MFG-209 Programming and Automation for Manufacturing [C]

3 credits, Winter

3.5 class hours/week

High-level computer literacy for technologists. Focus is on structured computer programming in Visual Basic language and the application of programming industrial automation. Hands-on experience in data acquisition. Basic knowledge of the PC required. Recommended: MFG-109

MFG-210 CAM Special Projects

1-4 credits, not offered every term

8 class hours/week

Allows students to integrate and improve CNC and CAD/CAM manufacturing skills. Students are assigned a variety of hands-on projects based on their skill level and interest. Recommended: MFG-201 & MFG-204. (May be taken concurrently with MFG-204).

MFG-211 Machine Tool Fundamentals IV

6 credits, Fall/Winter/Spring

12 class hours/week

Concentrates on CNC setup and operation and on surface grinding. Students will develop and apply their machining skills while creating products in a team environment. Additional topics may include fixture design and cutting mechanics. Recommended MFG-104, MFG-105, and MFG-113.

MFG-221 Materials Science

3 credits, Spring

6 class hours/week

Introduces metallurgy and material science. Extractive and physical metallurgy will be covered. Specific topics include heat treatment, materials analysis, the iron carbon phase diagram, composites, ceramics and industrial plastics.

MFG-240 Coordinate Measuring Machine Basics

2 credits, not offered every term

4 class hours/week

Introduction to measurements of part features and locations using a Brown & Sharpe CMM. Includes set-up for datum dimensioning of part features and principles of CMM's as they apply to industry to verify quality.

MFG-271 MasterCam Mill I

4 credits, not offered every term

8 class hours/week

Covers the creation and manipulation of two and three dimensional wire frame models as well as the creating, editing, and verification of 2-1/2 axis toolpaths. A fundamental understanding of the CAD/CAM process will be gained.

MFG-272 Mastercam Mill II

4 credits, not offered every term

8 class hours/week

Students construct three-dimensional geometric models using solids and surface modeling techniques. Students program models using advanced multi-axis programming techniques utilizing all aspects of roughing and finishing. Projects verified with solids toolpath verification. Recommended: MFG-271 or prior experience.

MFG-273 Mastercam Lathe

3 credits, not offered every term

6 class hours/week

Covers geometry creation and lathe programming using Mastercam to generate toolpaths such as: Rough, Finish, Thread and Drill. Mill/turn machining conventions, C-axis programming, tool libraries and solids toolpath verification are also covered. Recommended: MFG-271 or prior experience.

MFG-280 Manufacturing Technology/CWE

2-6 credits

Fall/Winter/Spring/Summer

1.5 class, 6-18 job site hours/week

Cooperative work experience. Practical experience in the manufacturing trades. Coordination of instruction will occur with industry and the manufacturing and cooperative work departments. Required: Instructor consent & a CWE seminar.

MTH**Mathematics****MTH-010 Fundamentals of Arithmetic I**

4 credits, Fall/Winter/Spring/Summer

4 class hours/week

Reviews operations on whole numbers, elementary fraction concepts, operations on decimals, and measurement.

MTH-020 Fundamentals of Arithmetic II

4 credits, Fall/Winter/Spring/Summer
4 class hours/week

Topics include factors and multiples, operations on fractions, percents, ratios and proportions, powers and square roots, and introduction to graphs, and signed numbers. Prerequisite: Pass MTH-010 with a "C" or better.

MTH-050 Technical Mathematics I

3 credits, Fall/Winter/Spring/Summer
4 class hours/week

Topics include problem-solving, estimating, metric measurement, simple geometry, ratios and proportions, scientific notation, accuracy and precision of measurements, and an introduction to algebra. Prerequisite: Pass MTH-020 with a "C" or better.

MTH-054 Math for Health Care Professionals

3 credits, Fall/Winter
4 class hours/week

Topics include problem solving, ratios and proportions, accuracy and precision of metric, apothecary and household systems of measurement and calculating medication doses. Required: Instructor consent. Prerequisite: Pass MTH-020 with a "C" or better. This course may not be waived.

MTH-060 Algebra I

4 credits, Fall/Winter/Spring/Summer
4 class hours/week

An introduction to topics in algebra using the rule-of-four approach. Designed for review or for the beginner, expressions, equations, and inequalities are explored numerically, symbolically, graphically, and verbally. Prerequisite: Pass MTH-020 with a "C" or better.

MTH-065 Algebra II

4 credits, Fall/Winter/Spring/Summer
4 class hours/week

The second term of topics in algebra using the rule-of-four approach. This course continues the exploration of expressions, equations, and inequalities numerically, symbolically, graphically, and verbally. Prerequisite: Pass MTH-060 with a "C" or better.

MTH-080 Technical Mathematics II

3 credits, Fall/Winter/Spring/Summer
4 class hours/week

Topics include introduction to statistics, graphing data, linear equations, linear systems of equations, trigonometry, and applications of geometry. Prerequisite: Pass MTH-050 with a "C" or better.

MTH-082 Math for Water Technology

1-4 credits, Fall/Winter
1 class hour/week

Math problem solving for water, wastewater and ultrapure water applications. Problems include flow rate, chemical dosage, detention time, treatment plant loading, treatment process efficiency, unit conversion and process control. Prerequisite: Pass MTH-065 with a "C" or better. This course may not be waived.

MTH-085 Technical Mathematics III

3 credits, Fall/Winter/Spring/Summer
4 class hours/week

Topics include power equations, root equations, nonlinear equations, quadratic equations, functions, trigonometric functions, and applications of solid geometry. Prerequisite: Pass MTH-080 with a "C" or better.

MTH-092 Math for Computer Technicians

4 credits, Fall/Winter
4 class hours/week

A survey of topics relevant to computer technicians that includes number systems, logic, truth tables, Boolean algebra, base 2 and base 16 representation, and circuit reduction. The course will emphasize problem solving techniques, and will involve the use of appropriate computer software. Recommended: Placement in RD-115 & placement in WR-121. Prerequisites: Pass CS-120, pass MTH-065 with a "C" or better & pass WR-090 (formerly WR-011). This course may not be waived.

MTH-095 Algebra III

4 credits, Fall/Winter/Spring/Summer
4 class hours/week

The third term of topics in algebra using the rule-of-four approach is designed to prepare students for transfer-level math courses. This course emphasizes problem-solving and graphical techniques with the use of a graphing utility. Prerequisite: Pass MTH-065 with a "C" or better.

MTH-105 Introduction to Contemporary Math

4 credits, Fall/Winter/Spring
4 class hours/week

A transfer mathematics course for non-science majors. The topics covered in this course focus students on critical thinking, problem solving, mathematical communication, and applications relevant to contemporary society. Recommended: Placement in RD-115 & placement in WR-121. Prerequisite: Pass MTH-095 with a "C" or better.

MTH-111 College Algebra

5 credits, Fall/Winter/Spring/Summer
5 class hours/week

A transfer course designed for students preparing for trigonometry or statistics. Standards-based approach to functions and their properties. Particular attention will be paid to the use of functions to model applications and solve problems. Recommended: Placement in RD-115 & placement in WR-121. Prerequisite: Pass MTH-095 with a "C" or better.

MTH-112 Trigonometry/Pre-Calculus

5 credits, Fall/Winter/Spring/Summer
5 class hours/week

A transfer course designed for students preparing for calculus. Standards-based approach to trigonometric functions, polar coordinates, vectors, and parametric equations. Particular attention will be paid to modeling applications and solving problems. Recommended: Placement in RD-115 & placement in WR-121. Prerequisite: Pass MTH-111 with a "C" or better.

MTH-211 Fundamentals of Elementary Math I

4 credits, Fall
4 class hours/week

Problem solving, logic, set theory, and whole numbers. Recommended: Placement in RD-115 & placement in WR-121. Prerequisite: Pass MTH-095 with a "C" or better.

MTH-212 Fundamentals of Elementary Math II

4 credits, Winter
4 class hours/week

Integers, rational numbers, real numbers, probability and statistics. Recommended: Placement in RD-115 & placement in WR-121. Prerequisite: Pass MTH-211 with a "C" or better.

MTH-213 Fundamentals of Elementary Math III

4 credits, Spring
4 class hours/week

Geometry, measurement, computer software applications. Recommended: Placement in RD-115 & placement in WR-121. Prerequisite: Pass MTH-212 with a "C" or better.

MTH-243 Probability & Statistics

4 credits, Fall/Winter/Spring/Summer
4 class hours/week

Descriptive statistics, elementary probability, random variables, and inferences on the mean. Recommended: Placement in RD-115 & placement in WR-121. Prerequisite: Pass MTH-111 with a "C" or better.

MTH-244 Statistics

4 credits
Fall/Winter/Spring/Summer
4 class hours/week

Hypothesis tests and confidence intervals for one and two populations, statistical quality control, linear regression, test for association, and analysis of variance. A student project is required. Recommended: Placement in RD-115 & placement in WR-121. Prerequisite: Pass MTH-243 with a "C" or better.

MTH-251 Calculus I

5 credits, Fall/Winter/Spring/Summer
5 class hours/week

Topics and applications of differentiation. Recommended: Placement in RD-115 & placement in WR-121. Prerequisite: Pass MTH-112 with a "C" or better.

MTH-252 Calculus II

5 credits, Winter/Spring/Summer
5 class hours/week

Topics and applications of integration. Recommended: Placement in RD-115 & placement in WR-121. Prerequisite: Pass MTH-251 with a "C" or better.

MTH-253 Calculus III

5 credits, Fall/Spring
5 class hours/week

Additional topics in calculus including sequences and series. Recommended: Placement in RD-115 & placement in WR-121. Prerequisite: Pass MTH-252 with a "C" or better.

MTH-254 Vector Calculus

5 credits, Winter
5 class hours/week

The study of vectors and analytic geometry in three-space, the calculus of vector-valued functions, and the calculus of several variables. Recommended: Placement in RD-115 & placement in WR-121. Prerequisite: Pass MTH-253 with a "C" or better.

MTH-256 Differential Equations

4 credits, Spring
4 class hours/week

An introduction to the study of first-order differential equations, first-order systems of differential equations, linear systems of equations, and applications of these topics. Recommended: Placement in RD-115 & placement in WR-121. Corequisite: MTH-253.

MTH-261 Linear Algebra

4 credits, Fall
4 class hours/week

An introduction to systems of linear equations, vectors, matrices, linear transformations, determinants, and applications of these topics. Recommended: Placement in RD-115 & placement in WR-121. Prerequisite: Pass MTH-252 with a "C" or better.

MTH-280 Mathematics/CWE

2-6 credits, Fall/Winter/Spring/Summer

1.5 class, 6-18 job site hours/week

Cooperative work experience. Practical experience in teaching, tutoring or applying mathematics while supervised by a teacher or mathematician. Required: Instructor consent & a CWE seminar.

MUP**Music Performance****MUP-100 Individual Lessons: Non-Music Majors**

1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week

Private lessons for beginners, non-music majors, and students who receive a low rating in MUP 171-191 auditions. Brass, woodwind, percussion, string and keyboard instruments, and voice. Meets the arts & letters requirement for the AAOT degree.

MUP-102 Concert Band

2 credits, Fall/Winter/Spring
6 class hours/week

Performance and study of traditional and contemporary band literature. Emphasis on musical style and basic instrumental techniques as applied to ensemble playing. Tuition waivers available. Meets the arts & letters requirement for the AAOT degree. Required: ability to read music and play a band instrument.

MUP-104 Pep Band

0-1 credit, Fall/Winter/Spring
1 class hour/week, 10 performance hours/term

Instrumental performing group concentrating on rock, pop, and contemporary styles in the small to medium-sized group setting. No audition. Meets the arts & letters requirement for the AAOT degree.

MUP-105 Jazz Ensemble

2 credits, Fall/Winter/Spring
6 class hours/week

Instrumental performing group concentrating on jazz, Afro-Cuban, funk, and contemporary styles in the "big-band" setting. Includes exploration of jazz improvisation and styles of famous jazz orchestras and composers. Meets the arts & letters requirement for the AAOT degree.

MUP-121 Clackamas Chorale

1 credit, Fall/Winter/Spring
2 class hours/week

College-level vocal ensemble (mixed, male and female) focusing on a variety of musical styles, sound vocal techniques, and sight singing. Nonmajors, including community singers, welcome. No audition. Meets the arts & letters requirement for the AAOT degree.

MUP-122 Chamber Choir

2 credits, Fall/Winter/Spring
6 class hours/week

Select vocal ensemble which rehearses and performs choral music from the Renaissance to the 20th century. Provides preparation for entering professional fields of music and performance. Emphasis on a cappella singing applied to appropriate chamber music. Meets the arts & letters requirement for the AAOT degree. Recommended for vocal music majors.

MUP-125 Vocal Jazz Ensemble
2 credits, Fall/Winter/Spring
6 class hours/week

Performing ensemble that cultivates musical, professional, and personal growth through rehearsal and performance. Includes study of jazz as it applies to vocal ensemble combined with rhythm section. Emphasis on style, improvisation, and techniques. Meets the arts & letters requirement for the AAOT degree.

MUP-142 Chamber Ensemble: Jazz Combo I
0-1 credit, Fall/Winter/Spring
1-2 class hours/week

Instrumental performing group concentrating on jazz, Afro-Cuban, and contemporary styles in the combo/small group setting. Includes exploration of jazz improvisation and styles of famous jazz performers, and composers. Required: Instructor consent. Meets the arts & letters requirement for the AAOT degree.

MUP-158 Chamber Ensemble
0-2 credits, Fall/Winter/Spring
2-3 class hours/week

Rehearsal and performance of traditional vocal and instrumental chamber music (one musician per part). Includes concerts and coaching by area professionals. Highly recommended for music majors. Meets the arts & letters requirement for the AAOT degree. Recommended: Corequisite MUP-104, MUP-121 or MUP-122.

MUP-171 Individual Lessons: Jazz Piano
1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week
College level private lessons available to music majors and qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree.

MUP-171 Individual Lessons: Piano
1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week
College level private lessons required for music majors and available to qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree. Corequisite: MUS-189.

MUP-174 Individual Lessons: Jazz Voice
1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week
College level private lessons available to music majors and qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree.

MUP-174 Individual Lessons: Voice
1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week
College level private lessons required for music majors and available to qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree. Corequisite: MUS-189.

MUP-175 Individual Lessons: Violin
1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week
College level private lessons required for music majors and available to qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree. Corequisite: MUS-189.

MUP-176 Individual Lessons: Viola
1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week
College level private lessons required for music majors and available to qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree. Corequisite: MUS-189.

MUP-177 Individual Lessons: Cello
1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week
College level private lessons required for music majors and available to qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree. Corequisite: MUS-189.

MUP-178 Individual Lessons: Jazz Bass
1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week
College level private lessons available to music majors and qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree.

MUP-178 Individual Lessons: Bass
1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week
College level private lessons required for music majors and available to qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree. Corequisite: MUS-189.

MUP-180 Individual Lessons: Jazz Guitar
1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week
College level private lessons available to music majors and qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree.

MUP-180 Individual Lessons: Guitar
1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week
College level private lessons required for music majors and available to qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree. Corequisite: MUS-189.

MUP-181 Individual Lessons: Jazz Flute
1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week
College level private lessons available to music majors and qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree.

MUP-181 Individual Lessons: Flute
1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week
College level private lessons required for music majors and available to qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree. Corequisite: MUS-189.

MUP-182 Individual Lessons: Oboe
1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week
College level private lessons required for music majors and available to qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree. Corequisite: MUS-189.

MUP-183 Individual Lessons: Jazz Clarinet

1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week
College level private lessons available to music majors and qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree.

MUP-183 Individual Lessons: Clarinet

1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week
College level private lessons required for music majors and available to qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree. Corequisite: MUS-189.

MUP-184 Individual Lessons: Jazz Saxophone

1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week
College level private lessons available to music majors and qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree.

MUP-184 Individual Lessons: Saxophone

1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week
College level private lessons required for music majors and available to qualified nonmajors. End-of-term juried performance mandatory. Corequisite: MUS-189. Meets the arts & letters requirement for the AAOT degree.

MUP-185 Individual Lessons: Bassoon

1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week
College level private lessons required for music majors and available to qualified nonmajors. End-of-term juried performance mandatory. Corequisite: MUS-189. Meets the arts & letters requirement for the AAOT degree.

MUP-186 Individual Lessons: Jazz Trumpet

1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week
College level private lessons available to music majors and qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree.

MUP-186 Individual Lessons: Trumpet

1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week
College level private lessons required for music majors and available to qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree. Corequisite: MUS-189.

MUP-188 Individual Lessons: Jazz Trombone

1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week
College level private lessons available to music majors and qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree.

MUP-188 Individual Lessons: Trombone

1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week
College level private lessons required for music majors and available to qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree. Corequisite: MUS-189.

MUP-189 Individual Lessons: Baritone

1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week
College level private lessons required for music majors and available to qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree. Corequisite: MUS-189.

MUP-190 Individual Lessons: Tuba

1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week
College level private lessons required for music majors and available to qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree. Corequisite: MUS-189.

MUP-191 Individual Lessons: Jazz Percussion

1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week
College level private lessons available to music majors and qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree.

MUP-191 Individual Lessons: Percussion

1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week
College level private lessons required for music majors and available to qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree. Corequisite: MUS-189.

MUP-194 Chamber Ensemble: Percussion

1 credit, Fall/Winter/Spring
1-2 class hours/week
Instrumental performing group concentrating on percussion literature from all musical periods. Tuition waivers available to deserving students. Meets the arts & letters requirement for the AAOT degree. Required: Instructor consent.

MUP-202 Concert Band

2 credits, Fall/Winter/Spring
6 class hours/week
Performance and study of traditional and contemporary band literature. Emphasis on musical style and basic instrumental techniques as applied to ensemble playing. Tuition waivers available. Meets the arts & letters requirement for the AAOT degree. Required: Ability to read music and play a band instrument.

MUP-204 Pep Band

0-1 credit, Fall/Winter/Spring
1 class hour/week, 10 performance hours/term
Instrumental performing group concentrating on rock, pop, and contemporary styles in the small to medium-sized group setting. No audition. Meets the arts & letters requirement for the AAOT degree.

MUP-205 Jazz Ensemble

2 credits, Fall/Winter/Spring
6 class hours/week
Instrumental performing group concentrating on jazz, Afro-Cuban, funk, and contemporary styles in the "big-band" setting. Includes exploration of jazz improvisation and styles of famous jazz orchestras and composers. Meets the arts & letters requirement for the AAOT degree.

MUP-221 Clackamas Chorale

1 credit, Fall/Winter/Spring
2 class hours/week
College-level vocal ensemble mixed, male and female) focusing on a variety of musical styles, sound vocal techniques, and sight singing. Nonmajors, including community singers, welcome. No audition. Meets the arts & letters requirement for the AAOT degree.

MUP-222 Chamber Choir
2 credits, Fall/Winter/Spring
6 class hours/week

Select vocal ensemble which rehearses and performs choral music from the Renaissance to the 20th century. Provides preparation for entering professional fields of music and performance. Emphasis on a cappella singing applied to appropriate chamber music. Recommended for vocal music majors. Meets the arts & letters requirement for the AAOT degree.

MUP-225 Vocal Jazz Ensemble
2 credits, Fall/Winter/Spring
6 class hours/week

Performing ensemble that cultivates musical, professional, and personal growth through rehearsal and performance. Includes study of jazz as it applies to vocal ensemble combined with rhythm section. Emphasis on style, improvisation, and techniques. Meets the arts & letters requirement for the AAOT degree.

MUP-242 Chamber Ensemble: Jazz Combo IV
0-1 credit, Fall/Winter/Spring
1-2 class hours/week

Instrumental performing group concentrating on jazz, Afro-Cuban, and contemporary styles in the combo/small group setting. Includes exploration of jazz improvisation and styles of famous jazz performers, and composers. Meets the arts & letters requirement for the AAOT degree.

MUP-258 Chamber Ensemble
0-2 credits, Fall/Winter/Spring
2-3 class hours/week

Rehearsal and performance of traditional vocal and instrumental chamber music (one musician per part). Includes concerts and coaching by area professionals. Meets the arts & letters requirement for the AAOT degree. Highly recommended for music majors. Recommended: Corequisite MUP-204, MUP-221 or MUP-222.

MUP-271 Individual Lessons: Piano
1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week
College level private lessons required for music majors and available to qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree. Corequisite: MUS-189.

MUP-271 Individual Lessons: Jazz Piano
1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week
College level private lessons available to music majors and qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree.

MUP-274 Individual Lessons: Voice
1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week
College level private lessons required for music majors and available to qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree. Corequisite: MUS-189.

MUP-274 Individual Lessons: Jazz Voice
1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week
College level private lessons available to music majors and qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree.

MUP-275 Individual Lessons: Violin
1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week
College level private lessons required for music majors and available to qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree. Corequisite: MUS-189.

MUP-276 Individual Lessons: Viola
1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week
College level private lessons required for music majors and available to qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree. Corequisite: MUS-189.

MUP-277 Individual Lessons: Cello
1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week
College level private lessons required for music majors and available to qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree. Corequisite: MUS-189.

MUP-278 Individual Lessons: Bass
1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week
College level private lessons required for music majors and available to qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree. Corequisite: MUS-189.

MUP-278 Individual Lessons: Jazz Bass
1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week
College level private lessons available to music majors and qualified nonmajors. End-of-term juried performance mandatory.

MUP-280 Individual Lessons: Guitar
1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week
College level private lessons required for music majors and available to qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree. Corequisite: MUS-189.

MUP-280 Individual Lessons: Jazz Guitar
1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week
College level private lessons available to music majors and qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree.

MUP-281 Individual Lessons: Flute
1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week
College level private lessons required for music majors and available to qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree. Corequisite: MUS-189.

MUP-281 Individual Lessons: Jazz Flute
1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week
College level private lessons available to music majors and qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree.

MUP-282 Individual Lessons: Oboe

1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week

College level private lessons required for music majors and available to qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree. Corequisite: MUS-189.

MUP-283 Individual Lessons: Clarinet

1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week

College level private lessons required for music majors and available to qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree. Corequisite: MUS-189.

MUP-283 Individual Lessons: Jazz Clarinet

1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week

College level private lessons available to music majors and qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree.

MUP-284 Individual Lessons: Saxophone

1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week

College level private lessons required for music majors and available to qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree. Corequisite: MUS-189.

MUP-284 Individual Lessons: Jazz Saxophone

1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week

College level private lessons available to music majors and qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree.

MUP-285 Individual Lessons: Bassoon

1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week

College level private lessons required for music majors and available to qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree. Corequisite: MUS-189.

MUP-286 Individual Lessons: Trumpet

1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week

College level private lessons required for music majors and available to qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree. Corequisite: MUS-189.

MUP-286 Individual Lessons: Jazz Trumpet

1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week

College level private lessons available to music majors and qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree.

MUP-288 Individual Lessons: Trombone

1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week

College level private lessons required for music majors and available to qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree. Corequisite: MUS-189.

MUP-288 Individual Lessons: Jazz Trombone

1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week

College level private lessons available to music majors and qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree.

MUP-289 Individual Lessons: Baritone

1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week

College level private lessons required for music majors and available to qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree. Corequisite: MUS-189.

MUP-290 Individual Lessons: Tuba

1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week

College level private lessons required for music majors and available to qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree. Corequisite: MUS-189.

MUP-291 Individual Lessons: Percussion

1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week

College level private lessons required for music majors and available to qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree. Corequisite: MUS-189.

MUP-291 Individual Lessons: Jazz Percussion

1 credit, Fall/Winter/Spring/Summer
One 30-minute private lesson/week

College level private lessons available to music majors and qualified nonmajors. End-of-term juried performance mandatory. Meets the arts & letters requirement for the AAOT degree.

MUS**Music****MUS-101 Music Fundamentals**

3 credits, Fall
3 class hours/week

Introduction to fundamentals of reading and writing music. Designed for non-music majors or majors needing substantial preparation for Music Theory I. Meets the arts & letters requirement for the AAOT degree.

MUS-101L MIDI Lab [C]

0 credit, Fall
1 lab hour/week

A MIDI lab in which Music Fundamentals students improve their music skills and become familiar with music-related software packages. The applications are designed to reinforce concepts presented in MUS-101. Meets the arts & letters requirement for the AAOT degree. Meets computer literacy requirement.

MUS-102 Music Fundamentals

3 credits, Winter
3 class hours/week

Introduction to fundamentals of reading and writing music. Designed for non-music majors or majors needing substantial preparation for Music Theory I. Meets the arts & letters requirement for the AAOT degree.

MUS-102L MIDI Lab [C]

0 credit, Winter
1 lab hour/week

A MIDI lab in which Music Fundamentals students improve their music skills and become familiar with music-related software packages. The applications are designed to reinforce concepts presented in MUS-102. Meets the arts & letters requirement for the AAOT degree. Meets computer literacy requirement.

MUS-103 Music Fundamentals

3 credits, Spring
3 class hours/week

Introduction to fundamentals of reading and writing music. Designed for non-music majors or majors needing substantial preparation for Music Theory I. Meets the arts & letters requirement for the AAOT degree.

MUS-103L MIDI Lab [C]

0 credit, Winter
1 lab hour/week

A MIDI lab in which Music Fundamentals students improve their music skills and become familiar with music-related software packages. The applications are designed to reinforce concepts presented in MUS-103. Meets the arts & letters requirement for the AAOT degree. Meets computer literacy requirement.

MUS-105 Music Appreciation [C]

3 credits, Fall/Winter/Spring/Summer
3 class hours/week

Explores music from the Medieval through the 20th Century featuring instrumental and vocal music. Study of musical terms, instruments of the orchestra, musical genres and composers including Haydn, Mozart, Beethoven, Tchaikovsky, Brahms, and Stravinsky. Meets the arts & letters requirement for the AAOT degree. Meets computer literacy requirement. Also offered as an online course.

MUS-106 Audio Recording at Home

1 credit

Fall/Winter/Spring/Summer

Weekend course/10 class hours

An overview of the basic tools and techniques used in audio recording at home. Get help with your home recording equipment. Depending on participant needs, topics may include signal path, microphone applications, software, hardware, outboard gear, soldering techniques, tracking, mixing, and editing. Meets the arts & letters requirement for the AAOT degree.

MUS-107 Introduction to Audio Recording I

3 credits

Fall/Winter/Spring/Summer

3 class hours/week

Introduction to the basic techniques and tools used in audio recording. Areas of study include signal path, microphone applications, software, hardware, outboard gear, soldering techniques, tracking, mixing, and editing. Meets the arts & letters requirement for the AAOT degree.

MUS-108 Introduction to Audio Recording II

3 credits, Winter/Spring

3 class hours/week

Exploration of techniques and tools used in audio recording. Analog, digital, and hard drive recording will be explored. Areas of study include multi-tracking, signal path, microphone applications, software, hardware, outboard gear, soldering techniques, tracking, mixing, and editing. Software/hardware includes ProTools, ADAT, Mackie, etc. Meets the arts & letters requirement for the AAOT degree. Prerequisite: Pass MUS-107.

MUS-109 Introduction to Audio Recording III

3 credits, Spring

3 class hours/week

Exploration of digital recording/editing software and production of CD project. Advanced exploration of techniques and tools used in audio recording. Areas of study include signal path, microphone applications, software, hardware, outboard gear, tracking, mixing, and editing. Analog, digital, and hard drive recording will be explored. Software/hardware includes ProTools, ADAT, Mackie, etc. Meets the arts & letters requirement for the AAOT degree. Prerequisite: Pass MUS-107 & pass MUS-108.

MUS-111 Music Theory I

3 credits, Fall

3 class hours/week

Presents the diatonic material and structure of tonal music in theory and practice. Required for music majors. Meets the arts & letters requirement for the AAOT degree. Required: Ability to read music. Recommended: Placement in MTH-111, placement in RD-115 & placement in WR-121. Corequisites: MUS-111L, MUS-114 & MUS-127.

MUS-111L MIDI Lab [C]

0 credit, Fall

1 lab hour/week

Introduces students to Finale (music notation software) on Macintosh computers. Required for first-year music majors. Meets the arts & letters requirement for the AAOT degree. Meets the computer literacy requirement. Corequisites: MUS-111, MUS-114 & MUS-127.

MUS-112 Music Theory I

3 credits, Winter

3 class hours/week

Presents the diatonic material and structure of tonal music in theory and practice. Required for music majors. Meets the arts & letters requirement for the AAOT degree. Required: Ability to read music. Recommended: Placement in MTH-111, placement in RD-115 & placement in WR-121. Corequisites: MUS-112L, MUS-115 & MUS-128. Prerequisites: Pass MUS-111 & pass MUS-111L.

MUS-112L MIDI Lab [C]

0 credit, Winter

1 lab hour/week

Introduces students to Finale (music notation software) on Macintosh computers. Required for first-year music majors. Meets computer literacy requirement. Meets the arts & letters requirement for the AAOT degree. Corequisites: MUS-112, MUS-115 & MUS-128.

MUS-113 Music Theory I

3 credits, Spring

3 class hours/week

Presents the diatonic material and structure of tonal music in theory and practice. Required for music majors. Meets the arts & letters requirement for the AAOT degree. Required: Ability to read music. Recommended: Placement in MTH-111, placement in RD-115 & placement in WR-121. Corequisites: MUS-113L, MUS-116 & MUS-129. Prerequisites: Pass MUS-112 & pass MUS-112L.

MUS-113L MIDI Lab [C]

0 credit, Spring

1 lab hour/week

Introduces students to Finale (music notation software) on Macintosh computers. Required for first-year music majors. Meets computer literacy requirement. Corequisites: MUS-113, MUS-116 & MUS-129.

MUS-114 Aural Skills I

2 credits, Fall
2 class hours/week

Diatonic sight singing in major keys using sol feg syllables and moveable “do”. Melodic dictation and aural recognition of intervals and triads. Required for first-year music majors. Meets the arts & letters requirement for the AAOT degree. Corequisites: MUS-111, MUS-111L & MUS-127.

MUS-115 Aural Skills I

2 credits, Winter
2 class hours/week

Diatonic sight singing in major keys using sol feg syllables and moveable “do”. Melodic dictation and aural recognition of intervals, triads, and 7th chords. Required for first-year music majors. Meets the arts & letters requirement for the AAOT degree. Corequisites: MUS-112, MUS-128 & MUS-112L. Prerequisite: Pass MUS-114.

MUS-116 Aural Skills I

2 credits, Spring
2 class hours/week

Diatonic sight singing in major keys using sol feg syllables and moveable “do”. Melodic dictation and aural recognition of intervals, triads, and 7th chords. Required for first-year music majors. Meets the arts & letters requirement for the AAOT degree. Corequisites: MUS-113, MUS-113L & MUS-129. Prerequisite: Pass MUS-115.

MUS-120 Finale I [C]

2 credits, not offered every term
2 class hours/week

Fundamentals, specialized techniques and in-depth study or advanced techniques of computer-generated music notation via Finale for Macintosh. Meets the arts & letters requirement for the AAOT degree. Meets computer literacy requirement. Prerequisites: Pass MUS-113, pass MUS-113L & pass MUS-129.

MUS-121 Finale II [C]

2 credits, not offered every term
2 class hours/week

Fundamentals, specialized techniques and in-depth study or advanced techniques of computer-generated music notation via Finale for Macintosh. Meets the arts & letters requirement for the AAOT degree. Meets computer literacy requirement. Prerequisite: Pass MUS-120.

MUS-122 Finale III [C]

2 credits, not offered every term
2 class hours/week

Fundamentals, specialized techniques and in-depth study or advanced techniques of computer-generated music notation via Finale for Macintosh. Meets the arts & letters requirement for the AAOT degree. Meets computer literacy requirement. Prerequisite: Pass MUS-121.

MUS-124 Jazz Arranging/Finale [C]

3 credits, not offered every term
3 class hours/week

Introduction to jazz arranging taught via Finale, a music notation program. Includes ranges, transposition, and playing techniques of various instruments. Emphasis on current stylistic approaches and integration of electronic instruments. Meets the arts & letters requirement for the AAOT degree. Meets computer literacy requirement.

MUS-127 Keyboard Skills I

2 credits, Fall
2 class hours/week

Develops basic keyboard skills. Studies keyboard applications of the materials of tonal music. Meets the arts & letters requirement for the AAOT degree. Required for music majors. Corequisites: MUS-111, MUS-111L & MUS-114.

MUS-128 Keyboard Skills I

2 credits, Winter
2 class hours/week

Develops basic keyboard skills. Studies keyboard applications of the materials of tonal music. Meets the arts & letters requirement for the AAOT degree. Required for music majors. Corequisites: MUS-112, MUS-112L & MUS-115. Prerequisite: Pass MUS-127.

MUS-129 Keyboard Skills I

2 credits, Spring
2 class hours/week

Develops basic keyboard skills. Studies keyboard applications of the materials of tonal music. Meets the arts & letters requirement for the AAOT degree. Required for music majors. Corequisites: MUS-113, MUS-113L & MUS-116. Prerequisite: Pass MUS-128.

MUS-130 Music & Media: Sex, Drugs, Rock & Roll

1 credit, Fall/Winter/Spring
10 class hours/term (weekend course)

Explores the relationship of music to economic, political, cultural, and artistic subjects. Examines how music serves and is served by pop culture and media. Meets the arts & letters requirement for the AAOT degree.

MUS-131 Piano for Pleasure

1 credit, Fall
2 class hours/week

Beginning classroom piano instruction for non-music majors. Includes reading, theory, technique exercises, and the opportunity to share your music with others. All levels welcome, beginners through advanced. Meets the arts & letters requirement for the AAOT degree.

MUS-132 Piano for Pleasure

1 credit, Winter
2 class hours/week

Beginning classroom piano instruction for non-music majors. Includes reading, theory, technique exercises, and the opportunity to share your music with others. All levels welcome, beginners through advanced. Meets the arts & letters requirement for the AAOT degree.

MUS-133 Piano for Pleasure

1 credit, Spring
2 class hours/week

Beginning classroom piano instruction for non-music majors. Includes reading, theory, technique exercises, and the opportunity to share your music with others. All levels welcome, beginners through advanced. Meets the arts & letters requirement for the AAOT degree.

MUS-134 Group Voice

1 credit, Fall
2 class hours/week

Basic vocal techniques for the solo and ensemble singer. For music and non-music majors, voice and music education majors, and/or students who received low rating on MUP-174 audition. Meets the arts & letters requirement for the AAOT degree.

MUS-135 Group Voice

1 credit, Winter
2 class hours/week

Basic vocal techniques for the solo and ensemble singer. For music and non-music majors, voice and music education majors, and/or students who received low rating on MUP-174 audition. Meets the arts & letters requirement for the AAOT degree.

MUS-136 Group Voice

1 credit, Spring
2 class hours/week

Basic vocal techniques for the solo and ensemble singer. For music and non-music majors, voice and music education majors, and/or students who received low rating on MUP-174 audition. Meets the arts & letters requirement for the AAOT degree.

MUS-137 Group Guitar I: Guitar for Dummies

1 credit, Fall/Winter/Spring
2 class hours/week

For beginning to advanced players. Covers finger picking, lead guitar, rock and popular styles, music reading, and music theory. Students provide own instrument. Meets the arts & letters requirement for the AAOT degree.

MUS-138 Group Guitar II

1 credit, Winter
2 class hours/week

For intermediate to advanced players. Covers finger picking, lead guitar, rock and popular styles, music reading, and music theory. Students provide own instrument. Meets the arts & letters requirement for the AAOT degree.

MUS-139 Group Guitar III

1 credit, Spring
2 class hours/week

For intermediate to advanced players. Covers finger picking, lead guitar, rock and popular styles, music reading, and music theory. Students provide own instrument. Meets the arts & letters requirement for the AAOT degree.

MUS-140 Careers in Music

3 credits, Fall
3 class hours/week

An overview of the music industry career opportunities. Studies include recording studio management/engineering, music merchandising, promotion, music contracting, agent/personal manager, live performing, teaching, technical support, record business, video and film production/editing, retailing, and instrument repair. Meets the arts & letters requirement for the AAOT degree.

MUS-141 Introduction to the Music Business [C]

3 credits, Winter
33 online hours/term

Explores business basics, songwriting, demos, agents, managers, copyrights, gig and concert promotion, publishing, licensing, and music business structures. Meets the arts & letters requirement for the AAOT degree. Meets the computer literacy requirement.

MUS-142 Introduction To Electronic Music I: MIDI [C]

3 credits, Fall/Winter/Spring
3 class hours/week

Introduction to synthesis, MIDI sequencing, basic musical elements, and the basics of production. Learn how to make beats, loops, etc. Uses CuBase VST, Roland sound modules, Fatar keyboard controllers, Behringer mixers, and other common production software/hardware. Meets the arts & letters requirement for the AAOT degree. Meets the computer literacy requirement.

MUS-143 Introduction To Electronic Music II: Sequencing & Sampling [C]

3 credits, Winter/Spring
3 class hours/week

An introduction to digital audio in the MIDI environment. This course continues MIDI sequencing, and integrates audio into the MIDI environment. Uses CuBase VST, Roland sound modules, Fatar keyboard controllers, Behringer mixers, and other common production software/hardware. Meets the arts & letters requirement for the AAOT degree. Meets the computer literacy requirement. Prerequisite: Pass MUS-142.

MUS-144 Introduction To Electronic

Music III: Digital Audio [C]
3 credits, Spring

3 class hours/week

Exploration of digital sound recording and editing, synthesis, sampling, and sequencing. Presents CD production techniques integrating digital audio with the MIDI sequence. Uses Pro Tools, CuBase VST, and other common production software/hardware. Meets the arts & letters requirement for the AAOT degree. Meets the computer literacy requirement. Prerequisites: Pass MUS-142 & pass MUS-143. Meets the computer literacy requirement.

MUS-145 Introduction to Digital Sound, Video & Animation

3 credits, not offered every term
3 class hours/week

An introduction to new media. Includes sound, video, animation, mp3, DVD, and compression technology. Meets the arts & letters requirement for the AAOT degree.

MUS-146 Entertainment Law & New Media

3 credits, not offered every term
3 class hours/week

The basic elements of copyright law and licensing as it applies to artists, songwriters, composers, film makers, and New Media Artists. How to protect your intellectual property and benefit from your rights as a copyright owner. Meets the arts & letters requirement for the AAOT degree.

MUS-189 Performance & Repertoire

1 credit, Fall/Winter/Spring
1 class hour/week

A performance forum required for all students studying privately at the MUP 171-191 and MUP 271-291 levels. Each student must perform as a soloist on his/her major instrument at least once a term and must be present for performances of classmates. Performers will be critiqued by the instructor. Students will be required to attend approved concerts. Meets the arts & letters requirement for the AAOT degree.

MUS-201 Music Literature: Greek-Renaissance
4 credits, not offered every year
4 class hours/week

For nonmajors. Emphasis on cultivating understanding of music through study of elements, forms, and historical styles. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

MUS-202 Music Literature: Baroque-Classical
4 credits, Fall
4 class hours/week

For nonmajors. Emphasis on cultivating understanding of music through study of elements, forms, and historical styles. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

MUS-203 Music Literature: Romantic-the 20th Century
4 credits, not offered every year
4 class hours/week

For nonmajors. Emphasis on cultivating understanding of music through study of elements, forms, and historical styles. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

MUS-204 Music Literature: American Folk Music
4 credits, not offered every year
4 class hours/week

For nonmajors. Emphasis on cultivating understanding of music through study of elements, forms, and historical styles. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

MUS-205 Music Literature: History of Jazz
4 credits, Winter
4 class hours/week

For nonmajors. Emphasis on cultivating understanding of music through a study of elements, forms, and historical styles. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

MUS-206 Music Literature: History of Rock
4 credits, Fall/Winter/Spring/Summer
4 class/online hours/week

For nonmajors. Emphasis on cultivating understanding of music through study of elements, forms, and historical styles. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

MUS-211 Music Theory II
3 credits, Fall
3 class hours/week

Advanced study of the chromatic materials and structure of tonal music. Meets the arts & letters requirement for the AAOT degree. Required for second-year music majors. Recommended: Placement in MTH-111, RD-115 & WR-121. Corequisites: MUS-211L, MUS-214 & MUS-224. Prerequisites: Pass MUS-113, pass MUS-113L, pass MUS-116 & pass MUS-129.

MUS-211L MIDI Lab [C]
0 credit, Fall
1 lab hour/week

Advanced use of Finale (music notation software) and basic use of QuarkXPress (desktop publishing software) on Macintosh computers. Meets the arts & letters requirement for the AAOT degree. Required for second-year music majors. Meets computer literacy requirement. Corequisites: MUS-211, MUS-214 & MUS-224. Prerequisite: Pass MUS-113L.

MUS-212 Music Theory II
3 credits, Winter
3 class hours/week

Advanced study of the chromatic material and structure of tonal music. Meets the arts & letters requirement for the AAOT degree. Required for second-year music majors. Corequisites: MUS-212L, MUS-215 & MUS-225. Prerequisite: Pass MUS-211L & pass MUS-211.

MUS-212L MIDI Lab [C]
0 credit, Winter
1 lab hour/week

Advanced use of Finale (music notation software) and basic use of QuarkXPress (desktop publishing software) on Macintosh computers. Meets the arts & letters requirement for the AAOT degree. Required for second-year music majors. Meets computer literacy requirement. Corequisites: MUS-215, MUS-225 & MUS-212. Prerequisite: Pass MUS-211L.

MUS-213 Music Theory II
3 credits, Spring
3 class hours/week

Advanced study of the chromatic material and structure of tonal music. Meets the arts & letters requirement for the AAOT degree. Required for second-year music majors. Corequisites: MUS-213L, MUS-216 & MUS-226. Prerequisites: Pass MUS-212L & pass MUS-212.

MUS-213L MIDI Lab [C]
0 credit, Spring
1 lab hour/week

Advanced use of Finale (music notation software) and basic use of QuarkXPress (desktop publishing software) on Macintosh computers. Meets the arts & letters requirement for the AAOT degree. Required for second-year music majors. Meets computer literacy requirement. Corequisites: MUS-213, MUS-216 & MUS-226. Prerequisite: Pass MUS-212L.

MUS-214 Keyboard Skills II
2 credits, Fall
2 class hours/week

Advanced keyboard applications of the materials of diatonic and chromatic music. Meets the arts & letters requirement for the AAOT degree. Required for second-year music majors. Corequisites: MUS-211, MUS-211L & MUS-224. Prerequisite: Pass MUS-129.

MUS-215 Keyboard Skills II
2 credits, Winter
2 class hours/week

Advanced keyboard applications of the materials of diatonic and chromatic music. Meets the arts & letters requirement for the AAOT degree. Required for second-year music majors. Corequisites: MUS-212, MUS-212L & MUS-225. Prerequisite: Pass MUS-214.

MUS-216 Keyboard Skills II
2 credits, Spring
2 class hours/week

Advanced keyboard applications of the materials of diatonic and chromatic music. Meets the arts & letters requirement for the AAOT degree. Required for second-year music majors. Corequisites: MUS-213, MUS-213L & MUS-226. Prerequisite: Pass MUS-215.

MUS-224 Aural Skills II

2 credits, Fall
2 class hours/week

Diatonic and chromatic sight singing with sol feg syllables and moveable "do". Four-part dictation including all chromatic devices studied in Theory II. Meets the arts & letters requirement for the AAOT degree. Required for second-year music majors. Corequisites: MUS-211, MUS-211L & MUS-214. Prerequisite: Pass MUS-116.

MUS-225 Aural Skills II

2 credits, Winter
2 class hours/week

Diatonic and chromatic sight singing with sol feg syllables and moveable "do". Four-part dictation including all chromatic devices studied in Theory II. Meets the arts & letters requirement for the AAOT degree. Required for second-year music majors. Corequisites: MUS-212, MUS-212L & MUS-215. Prerequisite: Pass MUS-214.

MUS-226 Aural Skills II

2 credits, Spring
2 class hours/week

Diatonic and chromatic sight singing with sol feg syllables and moveable "do". Four-part dictation including all chromatic devices studied in Theory II. Meets the arts & letters requirement for the AAOT degree. Required for second-year music majors. Corequisites: MUS-213, MUS-213L & MUS-216. Prerequisite: Pass MUS-225.

MUS-280 Music/CWE

2-6 credits, Fall/Winter/Spring
1.5 class, 6-18 job site hours/week

Cooperative work experience. Provides students with on-the-job work experience in the field of music. Required: Instructor consent & a CWE seminar. Prerequisites: Pass MUS-107, pass MUS-140 & pass MUS-142.

NUR

Courses with this prefix may not transfer with credit to a four-year institution unless applied as part of the 12 allowable professional technical credits for the AAOT or ASOT-Business.

Nursing**NUR-090 Certified Nursing Assistant I**

7 credits, Fall/Spring/Winter/Summer
75 class/lab hours/term

Prepare the student to perform routine nursing assistant tasks to clients in the acute care setting, sub-acute care setting and in the community. The Oregon State Board of Nursing requires 75 hours of didactic and skills lab instruction. May not be challenged. Restricted: Instructor consent.

NUR-090C Certified Nursing Assistant I Clinical

0 credit, Fall/Spring/Winter/Summer
75 clinical hours/term

Perform routine nursing assistant tasks to clients in hospitals, long-term and skilled care facilities, and in the community. The Oregon State Board of Nursing requires 75 hours of clinical practicum. May not be challenged. Restricted: Instructor consent.

NUR-101 Nursing I

4 credits, Fall
4 class hours/week

Introductory course for the Nursing Program. Presents concepts, principles and skills, while emphasizing the nursing process and critical thinking skills. Studies the care of clients with integumentary, sensory and mobility problems, stressing roles and responsibilities. May not be challenged. Limited to admitted nursing students.

NUR-101C Nursing I Clinical

4 credits, Fall
12 clinical/lab hours/week

Clinical application of NUR-101 content.

NUR-102 Nursing II

4 credits, Winter
4 class hours/week

Covers the problems and needs of clients with respiratory, cardiovascular and endocrine disorders. May not be challenged. Limited to admitted nursing students. Prerequisites: Pass NUR-101 pass PHC-211, all with a "C" or better.

NUR-102C Nursing II Clinical

4 credits, Winter
12 clinical/lab hours/week

Clinical application of NUR-101 and NUR-102 content.

NUR-103 Nursing III

4 credits, Spring
4 class hours/week

Examines nursing care of the peri-operative client as well as clients with gastrointestinal/genitourinary problems and cancer. Principles of client teaching/learning are also addressed. May not be challenged. Limited to admitted nursing students. Prerequisites: Pass NUR-102 & pass PHC-212, all with a "C" or better.

NUR-103C Nursing III Clinical

4 credits, Spring
12 clinical/lab hours/week

Clinical application of NUR-101, NUR-102 and NUR-103 content.

NUR-112 Discipline of Professional Nursing I

1 credit, Fall
10 class hours/term

First course in the 6-term series of 1 credit hour courses. Therapeutic and non-therapeutic communication styles are addressed as well as professional boundaries, stressors/coping mechanisms, work styles and values clarification. Group roles and principles will be introduced. Limited to admitted nursing students.

NUR-113 Discipline of Professional Nursing II

1 credit, Winter
10 class hours/term

Second course in the 6-term series of 1 credit hour courses. Critical thinking skills are introduced as well as concepts involving conflict management/resolution, cultural competence, teaching/learning styles and ethical issues surrounding client and/or nurse's rights in the delivery of healthcare. Prerequisite: Pass NUR-112.

NUR-114 Discipline of Professional Nursing III

1 credit, Spring

10 class hours/term

Third course in the 6-term series of 1 credit hour courses. Focus of this course is the student's awareness and knowledge of the professional accreditation of hospitals and other healthcare related environments, anger management and the art of negotiation, delegation techniques, as well as substance abuse in healthcare and the nurse at risk. Prerequisite: Pass NUR-113.

NUR-160 Fluid and Electrolytes

2 credits, not offered every year

2 class hours/week

Focus of this course is to assist students in the understanding of fluid, electrolytes, acid-base balances and the interpretation of various diagnostic tests related to the client's clinical condition. Limited to admitted nursing students. Prerequisite: Pass BI-233.

NUR-201 Nursing IV

4 credits, Fall

4 class hours/week

Theoretical and practical application of nursing concepts to the care of clients. Includes nursing care of the childbearing family, clients with gynecological problems, and selected medical and surgical conditions of children. NUR-201/202/203 must be taken in order. May not be challenged. Limited to admitted nursing students. Prerequisite: Pass NUR-103 with a "C" or better.

NUR-201C Nursing IV Clinical

6 credits, Fall

18 clinical/lab hours/week

Clinical application of first year theory, skills and NUR-201 content.

NUR-202 Nursing V

4 credits, Winter

4 class hours/week

Theoretical and practical application related to the care of clients with psychiatric disorders. Care of clients with advanced cardiac and respiratory disorders will also be addressed as well as those with multi-organ dysfunction syndrome. May not be challenged. Limited to admitted nursing students. Prerequisite: Pass NUR-201 with a "C" or better.

NUR-202C Nursing V Clinical

6 credits, Winter

18 clinical/lab hours/week

Clinical application of previous and current program content.

NUR-203 Nursing VI

4 credits, Spring

4 class hours/week

Theoretical and practical applications of nursing concepts related to the care of clients with neurological and hematological disorders. Client care management and community health concepts will also be addressed. May not be challenged. Limited to admitted nursing students. Prerequisite: Pass NUR-202 with a "C" or better.

NUR-203C Nursing VI Clinical

6 credits, Spring

18 clinical/lab hours/week

Precepted clinical experience allowing the student to apply previous and current program content.

NUR-212 Discipline of Professional Nursing IV

1 credit, Fall

10 class hours/term

Fourth course in the 6-term series of 1 credit hour courses. Guiding principles and communication skills required for problem-solving, decision making and planned change regarding ethical issues in healthcare. Prerequisite: Pass NUR-114.

NUR-213 Discipline of Professional Nursing V

1 credit, Winter

10 class hours/term

Fifth course in the 6-term series of 1 credit hour courses. This course focuses on the student's transition from a member of the public to a member of the nursing profession. Principles of resume construction, interview techniques and emotional intelligence in relation to job stress will be addressed. Prerequisite: Pass NUR-212.

NUR-214 Discipline of Professional Nursing VI

1 credit, Spring

10 class hours/term

Sixth course in the 6-term series of 1 credit hour courses. This course focuses on healthcare finances and budgetary concerns, death & dying, legal/political/social issues in nursing, and assertiveness in patient advocacy. Prerequisite: Pass NUR-213.

NUR-217 EKG Interpretation

1 credit, Spring

3 class hours/week

Four-week course focuses on developing skills in arrhythmia recognition and interpretation. Overview of cardiac A & P, and electro-physiology. Recommended for graduating nurses or practicing registered nurses who desire to increase their knowledge in EKG analysis.

NUR-288 Physical Assessment

3 credits, not offered every year

2 class, 3 lab hour/week

Focuses on the role and responsibility of the professional nurse to assess the health status of individuals. Complete health history and systematic physical assessment in a laboratory setting. Restricted: Registered nurses and nursing students.

OS

Courses with this prefix will not transfer with credit to a four-year institution.

Study Skills

See also English as a Second Language (ESL), Study Skills (EL).

OS-010 Study Skills/Student Athletes

1-3 credits, Fall

Learning strategies for college targeted for student athletes. Explores academic strengths and weaknesses, tips for student success, and study skills.

OS-011 Effective Study Skills

1-3 credits

Fall/Winter/Spring/Summer

Variable credit online course emphasizes learning skills for college success: time management, listening, notetaking, study/reading textbooks, concentration, test preparation/anxiety, library resources. Prerequisite: Placement in RD-090 or pass RD-080.

OST

Courses with this prefix may not transfer with credit to a four-year institution.

Occupational Skills Training

OST-180 Occupational Skills Training Program

2-12 credits

Fall/Winter/Spring/Summer

1.5 class, 6-36 job site hours/week

On-site job training in specific occupational areas not currently offered at CCC. The occupational areas are chosen by the student and vocational or agency counselor and CCC program coordinator. Required: Instructor consent & a seminar.

PE

Physical Education

PE-131 Introduction to Physical Education Health & Recreation

3 credits, Spring, every other year

3 class hours/week

Provides overview of the profession. Examines professional orientation, philosophy, performance objectives, personal qualifications, professional organizations and publications, and job opportunities. Recommended: Placement in WR-121.

PE-185 Physical Education

1 credit, Fall/Winter/Spring

3 activity hours/week

Activities may include badminton, basketball, conditioning, aerobic dance (both regular & step) modern dance, ballet, tap and jazz dance, self defense, tai chi, soccer, golf, jogging, karate, mountaineering, horseback riding, racquetball, exercise and relaxation, tennis, skiing (downhill and cross country) softball, swimming, volleyball, and weight training. Current physical examination before enrolling in a physical education course is recommended.

PE-260 Care/Prevention of Athletic Injuries

2 credits, Fall/Winter

3 class, 3 lab hours/week

Care and prevention of athletic injuries. Taping techniques and rehabilitation methods of injury will be discussed and practiced.

PE-280 Physical Education/CWE

2-6 credits

Fall/Winter/Spring/Summer

1.5 class, 6-18 job site hours/week

Cooperative work experience. Provides students with on the job experience and training related to the Physical Education field. Covers job problems and procedures, evaluation of student's job performance by qualified college staff and site supervision. Required: Instructor consent & a CWE seminar.

PE-292 Swim/Safety Instructor

1 credit, Fall/Winter/Spring

3 class hours/week

American Red Cross water safety instructor course. Certification given upon completion.

PE-293 Lifeguard Training

1 credit, Fall/Winter/Spring

3 class hours/week

American Red Cross Lifeguard Training course. Certification given upon completion.

PE-194/PE-294 Professional Activities

1-2 credits, Fall/Winter/Spring

6 class hours/week

For Physical Education majors and minors. Basic skills, methods and techniques of teaching physical education. Activities offered are: basketball/volleyball, fundamentals of movement, field games, conditioning, tennis/badminton, or track and field.

PE-294 Philosophy of Coaching

2 credits, Fall/Winter/Spring

3 class hours/week

This course is designed to enhance the leadership, teaching, and management skills of coaches as they relate to interaction with athletes at all levels. Group discussions and seminar sessions relating to coaching philosophies, ethics, practice planning, motivation, and dealing with parents, peers and assistants.

PH

Physics

See also Technical Physics (TPH).

PH-121 General Astronomy

4 credits, Fall

3 class, 3 lab hours/week

Discusses the history of astronomy, the earth and its moon, and the other planets in our solar system, along with asteroids, meteors, and comets. Meets the science requirement for the AAOT degree. Also offered as an online course. Recommended: Placement in RD-115, placement in WR-121; placement in MTH-105 or MTH-111.

PH-122 General Astronomy

4 credits, Winter

3 class, 3 lab hours/week

Discusses the properties of our sun and other stars, and stellar evolution. Meets the science requirement for the AAOT degree. Also offered as an online course. Recommended: Placement in RD-115, placement in WR-121; placement in MTH-105 or MTH-111. Prerequisite: Pass PH-121.

PH-123 General Astronomy

4 credits, Spring

3 class, 3 lab hours/week

Discusses star clusters, the properties of our own galaxy and the other galaxies, and cosmology. Meets the science requirement for the AAOT degree. Also offered as an online course. Recommended: Placement in RD-115, placement in WR-121; placement in MTH-105 or MTH-111. Prerequisite: Pass PH-122.

PH-201 General Physics

5 credits, Fall

4 class, 3 lab hours/week

Units and vectors, kinematics, forces, Newton's Laws of Motion, circular motion, work and energy, impulse and momentum, rotational motion. Meets the science requirement for the AAOT degree. Prerequisite: Pass MTH-111.

PH-202 General Physics

5 credits, Winter

4 class, 3 lab hours/week

Elasticity and simple harmonic motion, fluid statics and dynamics, heat energy and phase changes, heat transfer, kinetic theory of gases, waves and sound, wave interference, electric forces and fields. Meets the science requirement for the AAOT degree. Prerequisite: Pass PH-201.

PH-203 General Physics

5 credits, Spring
4 class, 3 lab hours/week

Electrical energy and voltage, Ohm's Law and DC circuits, magnetic forces and fields, EM induction, reflection and refraction of light, particles and waves, special relativity. Meets the science requirement for the AAOT degree. Prerequisite: Pass PH-202.

PH-211 General Physics With Calculus

5 credits, Fall
4 class, 3 lab hours/week

Kinematics, Newton's Laws of Motion, gravitation, work and energy, impulse and momentum, rotational motion. Meets the science requirement for the AAOT degree. Prerequisite: Pass MTH-251.

PH-212 General Physics With Calculus

5 credits, Winter
4 class, 3 lab hours/week

Equilibrium, elasticity, fluids, oscillations, waves, sound, temperature, thermal expansion, Ideal Gas law, Kinetic Theory of Gases, heat, First Law of Thermodynamics, electric charge and field, Gauss' law. Meets the science requirement for the AAOT degree. Prerequisite: Pass PH-211.

PH-213 General Physics With Calculus

5 credits, Spring
4 class, 3 lab hours/week

Electric potential, capacitance, Ohm's Law and DC circuits, magnetic field and forces, EM induction, Maxwell's equations, geometric optics, special relativity, and Planck's constant. Meets the science requirement for the AAOT degree. Prerequisite: Pass PH-212.

PH-280 Physics/CWE

2-6 credits
Fall/Winter/Spring/Summer
1.5 class, 6-18 job site hours/week

Cooperative work experience. Provides students with on-the-job experience and training related to physics. A weekly seminar class is required and covers on-the-job issues and procedures. Supervision and evaluation of the student's job performance provided by qualified college staff and a supervisor at the employment site. Required: Instructor consent & a CWE seminar.

PHC**Pharmacology****PHC-211 Pharmacology I**

2 credits, Fall/Spring
2 class hours/week

Study of pharmacological properties, therapeutic and adverse effects on the body of cardiovascular, psychotherapeutic, autonomic nervous system drugs, and pain management. Prerequisites: BI-231 & BI-232 or admission to Nursing Program.

PHC-212 Pharmacology II

2 credits, Winter/Spring
2 class hours/week

Study of pharmacological properties, therapeutic and adverse effects of drugs on the respiratory, gastrointestinal, and endocrine system. Covers hormones, anti-inflammatory, anti-microbial, anti-infection and neoplastic agents. Prerequisite: PHC-211.

PHL**Philosophy****PHL-101 Philosophical Problems**

4 credits, Fall/Winter/Spring/Summer
4 class hours/week

Presents a variety of topics that may include: the nature of reality, knowledge, and doubt; the human condition; truth; and the search for meaning. Meets the arts & letters requirement for the AAOT degree. Also offered as a telecourse. Recommended: Placement in RD-115.

PHL-102 Ethics

4 credits, Fall/Winter/Spring
4 class hours/week

Introduces the study of morality: e.g., right and wrong, free will and determinism, morals and society. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115.

PHL-103 Critical Reasoning

4 credits, Fall/Winter/Spring
4 class hours/week

Focuses on improving reasoning and critical assessment ability. Emphasizes practical methods, involves study of editorials, essays, propaganda, and advertisements. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115.

PHL-205 Moral Issues

4 credits, not offered every term
4 class hours/week

Philosophical examination of selected moral issues such as the environment, biomedical ethics, human experimentation, professional ethics, privacy, and war. Meets the arts & letters requirement for AAOT degree. Recommended: Placement in RD-115.

PHL-210 Philosophy of Religion

4 credits, not offered every term
4 class hours/week

Introduces philosophic basis of religious thought in world culture. Explores different points of view. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115.

PHL-213 Asian Philosophy

4 credits, not offered every term
4 class hours/week

Examines the underlying belief systems of Hinduism, Buddhism, Taoism, and Confucianism. Course explores their concepts of cause and effect, freedom, personal identity, moral value, truth, and enlightenment. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115.

PHL-215 History of Western Philosophy

4 credits, not offered every term
4 class hours/week

Overview course examines the roots and development of Western thought including ancient, medieval, modern and contemporary philosophy. Covers concepts of existence, knowledge, truth, and morality. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115.

PIE

Courses with this prefix will not transfer with credit to a four-year institution. Courses are intended for PIE students.

Program for Intensive English**PIE-011 PIE Tutoring**

0 credit, Fall/Winter/Spring/Summer
3 class hours/week

Designed for the Program for Intensive English student who needs one-on-one instruction in conversation, pronunciation, reading, grammar, writing, or GED preparation. Required: Instructor consent.

PIE-022 Life Skills 1 & 2

0 credit, Fall/Winter/Spring/Summer
3-6 class hours/week

Introduces the language necessary to function in day-to-day American society at the beginning levels; listening, speaking, grammar, reading, and writing in the contexts of work, family, and community. Required: Instructor consent.

PIE-033 Intermediate Conversation

3 credits, Fall/Winter/Spring/Summer
3 class hours/week

Intermediate level students learn and practice speaking and listening to improve their fluency in English for living and working situations. Required: Instructor consent.

PIE-034 Upper Intermediate Conversation

3 credits, not offered every term

High-intermediate level students learn and practice speaking and listening to improve their fluency in English for living and working situations. Required: Instructor consent.

PIE-040 Beginning Grammar

0 credit, not offered every term
3 class hours/week

Presentation and practice of the verb "to be," present continuous verb tense, nouns, descriptive/possessive adjectives, prepositions of place and time, and simple sentence structures in written and spoken English. Required: Instructor consent.

PIE-041 Upper Beginning Grammar

0 credit, Fall/Winter/Spring/Summer
3 class hours/week

Presentation and practice of simple present and simple past, present and past continuous, adverbs of frequency, and nouns in written and spoken English. Required: Instructor consent.

PIE-042 Intermediate Grammar A

3 credits, Fall/Spring
3 class hours/week

Part A of a 2-part series. Presentation and practice of past tense, used to, future/be going to, comparative and superlative adjectives, and question forms in written and spoken English. Required: Instructor consent.

PIE-043 Intermediate Grammar B

3 credits, Winter/Summer
3 class hours/week

Part B of a 2-part series. Presentation and practice of present perfect with time expressions and adverbs of frequency, present perfect continuous, and modals of possibility, necessity and advice in written and spoken English. Required: Instructor consent.

PIE-044 Upper Intermediate Grammar A

3 credits, Fall/Spring
3 class hours/week

Part A of a two part series of classes designed to help upper intermediate ESL students gain knowledge and proficiency in the use of verb forms that frequently occur together, gerunds, and infinitives. Required: Instructor consent.

PIE-047 Upper Intermediate Grammar B

3 credits, Winter/Summer
3 class hours/week

Part B of a 2-part series. Presentation and practice of adjective clauses, phrasal verbs, and passive voice in written and spoken English. Required: Instructor consent.

PIE-050 Beginning Reading/Writing

0 credit, not offered every term
3 class hours/week

Designed for beginning level students who have limited knowledge of written English. Read and write short sentences and read short paragraphs, gain reading and scanning skills to use in everyday life and in the workplace. Required: Instructor consent.

PIE-051 Upper Beginning Reading

0 credit, Fall/Winter/Spring/Summer
3 class hours/week

This course is designed for upper beginning level students who read at the sentence level. Students will read short texts in order to improve reading skills. Required: Instructor consent.

PIE-052 Upper Beginning Writing

0 credit, Fall/Winter/Spring/Summer
3 class hours/week

This course is designed for upper beginning level students who write at the sentence level. Students will write a variety of sentences and put related sentences in paragraph form. Required: Instructor consent.

PIE-053 Intermediate Reading/Writing

6 credits, Fall/Winter/Spring/Summer
6 class hours/week

Designed for the intermediate level student. Focus is on paragraph level writing with emphasis on reading and writing skills as needed for more advanced ESL and college courses, in the workplace, and in everyday life. Required: Instructor consent.

PIE-054 Upper Intermediate Reading/Writing

6 credits, Fall/Winter/Spring/Summer
6 class hours/week

Designed for non-native speakers to develop the reading and writing skills needed to succeed in college and in everyday life. Introduction to longer compositions. Required: Instructor consent.

PIE-056 Intermediate Reading

3 credits, Fall/Winter/Spring/Summer
3 class hours/week

This course is designed for intermediate level ESL students who read at the paragraph level. The major purpose of the course is to improve the student's reading skills as needed for more advanced ESL and college courses, in the workplace, and in everyday life. Required: Instructor consent.

PIE-057 Intermediate Writing

3 credits, Fall/Winter/Spring/Summer
3 class hours/week

This course is designed for intermediate level ESL students who are ready to begin writing at the paragraph level. The major purpose of the course is to improve the student's writing skills as needed for more advanced ESL and college courses, in the workplace, and in everyday life. Required: Instructor consent.

PIE-058 Upper Intermediate Reading

3 credits, Fall/Winter/Spring/Summer
3 class hours/week

This course is designed for upper intermediate level ESL students who read beyond the paragraph level to develop the reading skills needed to succeed in college and in everyday life. Required: Instructor consent.

PIE-059 Upper Intermediate Writing

3 credits, Fall/Winter/Spring/Summer
3 class hours/week

This course is designed for upper intermediate level ESL students to develop the writing skills needed to succeed in college and in everyday life. Introduction to multiple paragraph essays. Required: Instructor consent.

PIE-060 Pronunciation

3 credits, not offered every term
3 class hours/week

Designed for ESL students who want to sound more natural when speaking English. Focuses on increasing awareness of the sounds of American English, improving intelligibility, and producing speech more fluently. Required: Instructor consent.

PIE-063 American Idioms A

3 credits, not offered every term
3 class hours/week

Part A of a 2-part series of classes. Introduces common American idioms while practicing conversation skills. Required: Instructor consent.

PIE-064 American Idioms B

3 credits, not offered every term
3 class hours/week

Part B of a 2-part series of classes. Introduces common American idioms while practicing conversation skills. Required: Instructor consent.

PIE-067 Video and Conversation

0 credit, not offered every term
2 class hours/week

Intensifies intermediate/advanced ESL language skills in listening/speaking. Outside of class, view Crossroads Café video series, complete workbook exercises. In class, practice listening for specific information, participate in pair, small group, whole class activities. Required: Instructor consent.

PIE-070 Computer Lab

0 credit, Fall/Winter/Spring/Summer
3 lab hours/week

Provides opportunities to improve English language skills by using language learning software. Required: Instructor consent.

PIE-081 Upper Intermediate Reading Skills

3 credits, not offered every term
3 class hours/week

Upper intermediate level students will practice the reading skills needed to succeed in college and in everyday life. Required: Instructor consent.

PIE-084 Vocabulary Building

3 credits, not offered every term
3 class hours/week

Developes upper intermediate to advanced level students' vocabulary range and vocabulary acquisition skills. Required: Instructor consent.

PIE-085 TOEFL/TOEIC Preparation

0 credit, not offered every term
1 class, 2 lab hours/week

Prepares students for the Test of English as a Foreign Language (TOEFL) and the Test of English for International Communication (TOEIC) by improving listening, grammar, reading and writing skills. Includes familiarization with test components, test-taking techniques, strategies and computer skills. Required: Instructor consent.

PIE-088 Skills for College Success

3 credits, not offered every term
3 class hours/week

For upper intermediate/advanced level PIE students who plan to attend a U.S. college or university. Increase knowledge of the culture/norms of the American classroom, college schedules/catalogs, analyze course materials, improve study/test-taking skills. Required: Instructor consent.

PS***Political Science*****PS-201 US Government: National Political Process**

4 credits, Fall
4 class hours/week

Reviews the development of the U.S. Constitution, including democratic vs. republican theories of government, evolution of civil liberties, and principles of equal protection of the law. Examines present state of Congress, presidency, and Supreme Court. Meets the social science requirement for the AAOT degree. Also offered as a telecourse. Recommended: Placement in RD-115.

PS-202 US Government: National Government Institutions

4 credits, Winter
4 class hours/week

Examines American political parties, the role of money in politics and American political participation in general. Examines American domestic, economic and foreign policy. Meets the social science requirement for the AAOT degree. Also offered as a telecourse. Recommended: Placement in RD-115.

PS-203 US Government: State/Local Institutions

4 credits, Spring
4 class hours/week

Introduction to American state and local government, with emphasis on Oregon political behavior in states and communities. Meets the social science requirement for the AAOT degree. Recommended: Placement in RD-115.

PS-204 Introduction to Comparative Politics

4 credits, Fall
4 class hours/week

Explores the various ideologies, institutions, and processes that constitute the nation-states that make up the world political system. Meets the social science requirement for the AAOT degree. Recommended: Placement in RD-115.

PS-205 International Relations

4 credits, Spring
4 class hours/week

Analysis of relations among nations and the nature of international relations, including diplomacy, peacekeeping and war as instruments of foreign policy. Meets the social science requirement for the AAOT degree. Recommended: Placement in RD-115.

PS-206 Introduction to Political Theory

4 credits, Winter
4 class hours/week

Introduces the fundamental political question: What is justice? Examines the writings of political thinkers, such as Plato, Marx, Locke, and Madison. Meets the social science requirement for the AAOT degree. Recommended: Placement in RD-115.

PS-225 Introduction to Political Ideologies

4 credits, Fall
4 class hours/week

Focuses primarily on the various political ideologies that make up the ideological universe and critically examines such distinct ideologies as liberalism, conservatism, socialism, libertarianism, and fascism. Meets the social science requirement for the AAOT degree. Recommended: Placement in RD-115.

PS-280 Political Science/CWE
2-6 credits, Fall/Winter/Spring
1.5 class, 6-18 job site hours/week

Cooperative work experience. Provides students with on-the-job work experience in the field of political science. Required: Instructor consent & a CWE seminar.

PSY

Psychology

PSY-101 Human Relations
3 credits, Fall/Winter/Spring/Summer
3 class hours/week

Introduction to interpersonal relationships and human relations in a social context. Includes individual and group activities, lecture, and discussions with an emphasis on student participation. Meets the social science requirement for the AAOT degree. Recommended: Placement in RD-115.

PSY-110 Psychology: An Overview
4 credits, Fall/Spring
44 hours/term

A general introduction to the field of psychology. Explores a wide variety of topics. Offered only as a telecourse. Meets the social science requirement for the AAOT degree. Recommended: Placement in RD-115.

PSY-200 Psychology As Natural Science
4 credits, Fall/Winter/Spring/Summer
4 class hours/week

Introduction to physiological psychology, the study of how the nervous system produces behavior and cognition. Further topics may include consciousness, sleep, memory, emotion, and language. Meets the social science requirement for the AAOT degree. Recommended: Placement in RD-115.

PSY-205 Psychology As a Social Science
4 credits, Fall/Winter/Spring
4 class hours/week

Principles of conditioning and social psychology, the study of how groups affect the individual. Further topics may include motivation, personality, development, and stress. Meets the social science requirement for the AAOT degree. Recommended: Placement in RD-115.

PSY-214 Introduction to Personality
4 credits, Winter
4 class hours/week

Explores the major theories about personality and personality assessment. Each of the major theories is examined for its contribution as well as its limitations in explaining the development or organization of personality. Meets the social science requirement for the AAOT degree. Recommended: Placement in RD-115.

PSY-215 Introduction to Developmental Psychology
4 credits, Fall/Winter/Spring/Summer
4 class hours/week

Research and theories regarding the development of the individual from conception to death, including physical, social and cognitive changes. Meets the social science requirement for the AAOT degree. Recommended: Placement in RD-115.

PSY-216 Introduction to Social Psychology
4 credits, not offered every year
4 class hours/week

Examines how we think about and interact with others. Includes perception, attributions, aggression, attitude formation, attraction, intimacy, social influence, and prejudice. Meets the social science requirement for the AAOT degree. Recommended: Placement in RD-115.

PSY-218 Introduction to Experimental Psychology
4 credits, not offered every year
4 class hours/week

Introduction to the principles of the scientific method in general and to the specific methods used in psychological research. Meets the social science requirement for the AAOT degree. Recommended for students pursuing a psychology major. Recommended: Placement in RD-115.

PSY-219 Introduction to Abnormal Psychology
4 credits, Fall/Winter/Spring
4 class hours/week

Introduction to abnormal psychology including disorders and approaches to treatment. Meets the social science requirement for the AAOT degree. May be taken in any order, but recommend PSY-200 precede PSY-219. Also offered as a telecourse. Recommended: Placement in RD-115.

PSY-221 Introduction to Counseling
4 credits, Winter/Spring
4 class hours/week

Provides an overview of the theoretical background for different approaches to counseling. Meets the social science requirement for the AAOT degree. Recommended: Placement in RD-115.

PSY-231 Introduction to Human Sexuality
4 credits, Fall/Winter/Spring
4 class hours/week

Introduction to research and theories of human sexual behavior, including sexual relationships, communication and intimacy, sex roles, the development of gender, social trends regarding sexuality, and the biology of sexuality and conception. Meets the social science requirement for the AAOT degree. Recommended: Placement in RD-115.

PSY-238 Psychology, Science, & Pseudoscience
4 credits, not offered every year
4 class hours/week

Develops a critical and objective thinking; separates fact from fiction. Focuses on an understanding of science and the scientific method, information processing, psychological barriers to sound thinking, and paranormal claims. Meets the social science requirement for the AAOT degree. Recommended: Placement in RD-115.

PSY-240 Interpersonal Awareness & Growth
4 credits, Fall/Winter
4 class hours/week

Examines the dynamics of personality and explores techniques for overcoming self-defeating behaviors. Develops methods for making personal changes. Meets the social science requirement for the AAOT degree. Recommended: Placement in RD-115.

PSY-280 Psychology/CWE
2-6 credits
Fall/Winter/Spring/Summer
1.5 class, 6-18 job site hours/week
Cooperative work experience. Provides students with on-the-job work experience in the field of psychology. Required: Instructor consent & a CWE seminar.

R**Religious Studies****R-101 Comparative Religions**
4 credits, Fall/Winter/Spring
4 class hours/week

The nature of myth and story, ancient religions, ideas of God, Judaism, and introduction to religious topics. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115.

R-102 Comparative Religions
4 credits, Fall/Winter/Spring
4 class hours/week

Covers written and oral sources, Christianity, Islam, and includes the history and philosophy of other Western religious developments. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115.

R-103 Comparative Religions
4 credits, Fall/Winter/Spring
4 class hours/week

The history, ideas, and philosophy of the Eastern religions including Buddhism, Hinduism, and Taoism. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115.

R-204 History of Christianity
4 credits, not offered every year
4 class hours/week

Covers early Christianity, the Apostles, and the development of the New Testament. Also covers post-apostolic Christianity, developments through the Middle Ages, Renaissance, Reformation, and the Modern Age. Contemporary topics include Christianity in conflict, ethical and social religious issues, and the face of contemporary Christianity. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115.

R-207 Judaic Studies
4 credits, not offered every year
4 class hours/week

Covers topics related to ancient Judaism and the Bible. Examines Judaism through the Diaspora and Rabbinic Judaism, Middle Ages, Renaissance, and the Modern Era. Contemporary topics include the Holocaust, Arab-Israeli Wars, and other religious conflicts. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115.

R-210 World Religions
4 credits, Winter
44 class hours/term

An overview course that examines Eastern/Western religions and philosophies through film, text, and/or online presentations. Introduces Hinduism, Buddhism, Chinese religions, Christianity, Judaism, and Islam. Offered only as a telecourse. Meets the arts & letters requirements for the AAOT degree. Recommended: Placement in RD-115.

R-211 History of the Old Testament
4 credits, not offered every year
4 class hours/week

Covers early influences on the Hebrew community, Patriarchs, Abraham, Moses and Sinai. Examines monarchy, prophets, and wisdom literature. Examines modern theories of biblical exegesis. Meets the arts & letters requirements for the AAOT degree. Recommended: Placement in RD-115.

R-212 History of the New Testament
4 credits, not offered every year
4 class hours/week

Covers the first century influences on the New Testament texts, the life of Jesus, and the Pauline letters. Other early writings will be discussed. Meets the arts & letters requirements for the AAOT degree. Recommended: Placement in RD-115.

R-280 Religion/CWE
2-6 credits
Fall/Winter/Spring/Summer

1.5 class, 6-18 job site hours/week
Cooperative work experience. Provides students with on-the-job work experience in the field of religion. Required: Instructor consent & a CWE seminar.

RD**Reading**

See also Study Skills (EL & SKO).

RD-080 Basic Reading Skills
1-3 credits, Fall/Winter/Spring
3 class hours/week

Identifies individual reading strengths/weaknesses. Emphasizes basic reading skills in vocabulary, main idea, inferences, comprehension. Prerequisite: Placement in RD-080.

RD-090 Intermediate Reading Skills
3 credits
Fall/Winter/Spring/Summer
3 class hours/week

Introduces and reinforces skills for success in entry-level college classes. Emphasizes vocabulary building, comprehension, textbook reading strategies, critical thinking. Prerequisite: Placement in RD-090 or pass RD-080.

RD-115 College Reading
3 credits, Fall/Winter/Spring
3 class hours/week

Emphasizes textbook comprehension, critical reading and thinking, vocabulary development, and speed techniques for college-level reading. Prerequisite: Placement in RD-115 or pass RD-090.

RE

Courses with this prefix may not transfer with credit to a four-year institution.

Real Estate**RE-118 Real Estate Appraisal I**
3 credits, Fall
3 class hours/week

Real estate appraisal principles and methodologies used in the valuation of residential property.

RE-228 Real Estate Appraisal II
3 credits, Winter
3 class hours/week

Application of the basic principles and methodologies of the valuation of residential property. A number of practical problems and a case study are reviewed. Prerequisite: Pass RE-118 or instructor consent.

RE-238 Real Estate Appraisal III
3 credits, Spring
3 class hours/week

Income property appraisal principles and methodology. Prerequisite: Pass RE-228 or instructor consent.

RE-239 Real Estate Appraisal IV
3 credits, not offered every year
3 class hours/week

Reinforces the student's ability to perform the appraisal of income-producing properties. Prerequisite: Pass RE-238 or instructor consent.

RUS**Russian****RUS-101 First-Year Russian**
4 credits, Fall
4 class hours/week

Introduces students to all basic language skills in Russian. Emphasis placed on oral skills, vocabulary, and grammar in patterns that imitate natural conversation. For students without a background in Russian. Conducted in Russian as much as possible. Recommended: Placement in RD-115 & placement in WR-121.

RUS-102 First-Year Russian
4 credits, Winter
4 class hours/week

Continues introduction of all basic language skills in Russian. Emphasis placed on developing oral skills and practicing vocabulary and grammar in patterns that imitate natural conversational exchanges. The course is conducted in Russian as much as possible. Prerequisite: Pass RUS-101 or instructor consent.

RUS-103 First-Year Russian
4 credits, Spring
4 class hours/week

Continues introduction of all basic language skills in Russian. Emphasis placed on oral skills, vocabulary, and grammar in patterns that imitate natural conversation. Conducted in Russian as much as possible. Prerequisite: Pass RUS-102 or instructor consent.

RUS-201 Second-Year Russian
4 credits, not offered every year
4 class hours/week

First of a three-term sequence in intermediate Russian which continues developing all of the basic language skills presented up through RUS-103. Course focuses on oral skills, vocabulary, and grammar in patterns that imitate natural conversation. Meets the arts & letters requirement for the AAOT degree. Prerequisite: RUS-103 or instructor consent.

RUS-202 Second-Year Russian
4 credits, not offered every year
4 class hours/week

Second of a three-term sequence in intermediate Russian which continues to focus on all of the language skills presented up through RUS-201. Meets the arts & letters requirement for the AAOT degree. Prerequisite: RUS-201 or instructor consent.

RUS-203 Second-Year Russian
4 credits, not offered every year
4 class hours/week

Third of a three-term sequence in intermediate Russian which continues to focus on all of the language skills presented up through RUS-202. Meets the arts & letters requirement for the AAOT degree. Prerequisite: RUS-202 or instructor consent.

SBM

Courses with this prefix will not transfer with credit to a four-year institution.

Small Business Management**SBM-020 Greenhouse/NxLevel™**
Fall/Spring

3 class hours/week, 20 weeks

Comprehensive two-term program for the entrepreneur starting up any type of new business or taking a fresh look at an established business. Evening classes in a seminar format, plus individual business counseling. Certificate awarded upon completion.

SBM-021 Small Business Management I
Fall

3 class hours/month, 10 months

First year of a three-year program to help owners and managers of established businesses manage more effectively and achieve success. Monthly evening class meetings plus individual business counseling. Class topics emphasize financial analysis, goals, and communication. Required: Instructor consent.

SBM-022 Small Business Management II
Fall

3 class hours/month, 10 months

Second-year topics emphasize marketing concepts and strategy. Monthly evening class meetings plus individual business counseling. Required: Instructor consent.

SBM-023 Small Business Management III
Fall

3 class hours/month, 10 months

Third-year topics emphasize integrating strategies and business growth. Monthly evening class meetings plus individual business counseling. Certificate awarded upon completion. Required: Instructor consent.

SKH

Courses with this prefix will not transfer with credit to a four-year institution.

TACT (Training in Adaptive Computer Technology)**SKH-020 Computer Access Evaluation**
1 credit, Fall/Winter/Spring/Summer
22 lab hours/term

Provides disability assessment, matches appropriate adaptive computer technology and surveys current computer skills. Must have documented disability and instructor approval. May be taken concurrently with SKH-25. Required: Instructor consent.

SKH-025 Adapted Keyboarding
1-2 credits

Fall/Winter/Spring/Summer
8 lab hours/week

Develops touch typing skills working toward a basic typing rate of 20/22 w.p.m. Must have documented disability. Required: Instructor consent.

SKH-030 Computer Access I [C]
1-3 credits

Fall/Winter/Spring/Summer
12 lab hours/week

Introduction to the use of an access technology appropriate to a student's ability, in the context of basic word processing. Must have documented disability. Meets computer literacy requirement. Required: Instructor consent.

SKH-035 Computer Access II [C]
1-3 credits

Fall/Winter/Spring/Summer
12 lab hours/week

Covers word processing and other software applications such as spreadsheets and database manager. Must have documented disability. Meets computer literacy requirement. Required: Instructor consent.

SKH-040 Computer Access Projects
1-6 credits

Fall/Winter/Spring/Summer
18 lab hours/week

For students who have completed TACT Center curriculum and need to use the Center's facilities to facilitate academic course work. Must have documented disability. Required: Instructor consent.

SM

Courses with this prefix may not transfer with credit to a four-year institution unless applied as part of the 12 allowable professional technical credits for the AAOT or ASOT-Business.

Microelectronics Systems Technology

Courses listed with the SM prefix and courses listed in the Electronics Systems Technology section with the EET prefix are the main core classes for the Microelectronics Systems Technology program. Many of these classes can be customized to meet the needs of the industry. For additional information on a customized class for your company, contact the Customized Training Department at ext. 3523.

SM-049 Semiconductor Operator I 10 credits, not offered every term 20 class hours/week

Workplace readiness program focusing on basic skills required for entry-level operator jobs in the semiconductor and microelectronics industries. Specialized curriculum covers cleanroom process techniques, manufacture of silicon wafer and computer chips, and workplace readiness. Corequisite: SM-050.

SM-050 Semiconductor Operator II 10 credits, not offered every term 20 class hours/week

A continuation of SM-049. Corequisite: SM-049.

SM-136 Photolithography 2 credits, Spring 2 class hours/week

Provides knowledge on the relationship between theoretical and practical aspects of current methods and equipment used in photolithography, as well as troubleshooting common process and equipment-related problems. Recommended: SM-150.

SM-150 Semiconductor Processing I 2 credits, Fall 2 class hours/week

Provides general background knowledge on the processes required to manufacture integrated circuit devices, beginning with silicon material preparation and ending with testing of a completed device. Microcontamination also covered.

SM-160 Semiconductor Processing II 2 credits, Winter 2 class hours/week

Provides an overview of basic processes involved in the fabrication of finished silicon wafers, oxidation and deposition processes. Troubleshooting of common equipment is emphasized. Recommended: SM-150.

SM-170 Semiconductor Processing III 2 credits, Spring 2 class hours/week

Covers the essential process and equipment related to etching, diffusion and ion implantation. Troubleshooting of common equipment and process related problems are emphasized. Recommended: SM-150.

SM-229 Vacuum Technology 2 credits, Spring 2 class hours/week

Focuses on elementary theory and practice of vacuum equipment for microelectronics processing. Students study vacuum fundamentals, pumps and equipment used in vacuum systems. Recommended: SM-150.

SM-280 Electronics & Microelectronics/ CWE 2-6 credits Fall/Winter/Spring/Summer 1.5 class, 6-18 job site hours/week

Cooperative work experience. Practical experience in the high-tech industry. Coordination of instruction will occur with industry and the manufacturing and cooperative work departments. Required: Instructor consent & a CWE seminar.

SOC

Sociology

SOC-204 Introduction to Sociology 4 credits, Fall/Winter/Spring/Summer 4 class hours/week

Explores the social perspectives on the principles and processes of human social behavior. Examines concepts such as culture, socialization, social structure, roles, groups, organizations, and social stratification and introduces various sociological theories and research methodologies. Meets the social science requirement for the AAOT degree. Also offered as a telecourse. Recommended: Placement in RD-115 & placement in WR-121.

SOC-205 Social Stratification and Social System 4 credits, Fall/Winter/Spring 4 class hours/week

Examines issues of social structure and social stratification. Explores various social institutions (family, economy, education, health, religion and politics) and inequalities of race, class, gender and age as well as various theoretical perspectives. Meets the social science requirement for the AAOT degree. Also offered as a telecourse. Recommended: Placement in RD-115 & placement in WR-121.

SOC-206 Institutions and Social Change 4 credits, Fall/Winter/Spring 4 class hours/week

Explores various social institutions (family, work, economy, education, health and politics), stratification systems, social movements, and other elements of culture from a social change perspective. Various theories of social organization and sources social change will be examined. Meets the social science requirement for the AAOT degree. Also offered as a telecourse. Recommended: Placement in RD-115 & placement in WR-121.

SOC-210 Marriage, Family & Intimate Relations 4 credits, not offered every year 4 class hours/week

This course will introduce students to the study of marriage, intimate relations, and family systems from the sociological viewpoint. Students will examine the ways in which race, class, gender, sexuality, community, and society influences patterns of courtship, intimate relations, marriage, and family, and explore the various challenges facing families today. Meets the social science requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

SOC-223 Psycho-Social Aspects of Aging 4 credits, Winter 4 class hours/week

An individual and societal perspective. Emphasis on normal versus abnormal aging, major life transitions, and providing services to the aged. Meets the social science requirement for the AAOT degree. Recommended: Placement in WR-121.

SOC-225 Social Problems

4 credits, not offered every term
4 class hours/week

Applies the sociological framework to the study of social problems, their identification, analysis of causes and possible solutions. Topics may include mental disorders, addiction, crime, discrimination, inequality, poverty, alienation, violence, environment, and energy. Meets the social science requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

SOC-230 Perspectives on Aging

4 credits, Fall
4 class hours/week

Overview of the field of gerontology. Characteristics of old people: Myths, stereotypes, and realities. Issues in aging: economic/political, physical/mental, and psychological/social. Networks of programs to serve the aged: governmental/families, and formal/informal. Meets the social science requirement for the AAOT degree. Recommended: Placement in WR-121.

SOC-231 Health & Biological Aspects of Aging

4 credits, Winter
4 class hours/week

Normal biological aging and the effects of life-style and disease on functional ability. Use tools to screen older people for functional and nutritional status and develop plans to enhance independence. Meets the social science requirement for the AAOT degree. Recommended: Placement in WR-121.

SOC-232 Encounters With Death

4 credits, Spring
4 class hours/week

Introduces current studies and programs in death, dying, grief, and bereavement. Activities and discussion designed to enable students to identify and face feelings about death. Meets the social science requirement for the AAOT degree. Recommended: Placement in WR-121.

SOC-280 Sociology/CWE

2-6 credits
Fall/Winter/Spring/Summer
1.5 class, 6-18 job site hours/week
Cooperative work experience. Provides students with on-the-job work experience in the field of sociology. Required: Instructor consent & a CWE seminar.

SP**Speech****SP-100 Basic Speech Communication**

3 credits, Fall/Winter/Spring
3 class hours/week

Explores interpersonal and small group dynamics and communication skills in day-to-day formal and informal situations. Examines positive self-concept, listening skills, and clarity of expression. Designed for non-transfer students.

SP-111 Public Speaking

4 credits, Fall/Winter/Spring/Summer
4 class hours/week

Practice in organization, research, and delivery of a variety of speeches. Note: Certain sections of SP-111 meet the computer literacy requirement. Meets the oral communication/rhetoric requirement for the AAOT degree. Also offered as an online course. Prerequisites: Placement in RD-115 & placement in WR-121.

SP-112 Persuasive Speaking

4 credits, Winter
4 class hours/week

Persuasive speaking, audience analysis, study of reasoning, and the basic theories of persuasion. Meets the oral communication/rhetoric requirement for the AAOT degree. Prerequisites: Placement in RD-115 & placement in WR-121.

SP-126 Communication Between Sexes

4 credits, Fall/Winter/Spring
4 class hours/week

Examines ways women and men are different and similar in their communication behaviors. Traditions, myths, social roles and current issues are discussed. Note: Certain sections of SP-126 meet the computer literacy requirement. Meets the arts & letters requirement for the AAOT degree. Also offered as an online course. Recommended: Placement in RD-115 & placement in WR-121.

SP-129 Oral Interpretation

4 credits, not offered every term
4 class hours/week

Oral interpretation of literature from the areas of prose, poetry and drama. Analyze specific literary works and communicate understanding through performance. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121. Prerequisite: Pass SP-111 or instructor consent. Corequisites: SP-221 or SP-222 or SP-223.

SP-140 Introduction to Intercultural Communication

4 credits, not offered every term
4 class hours/week

Explores the impact cultural differences have on the communication process; increases awareness of students' own cultural behaviors. Students discover effective ways to deal with difficult situations when a cultural difference causes a problem.

SP-150 Competitive Platform Speaking

4 credits, not offered every term
4 class hours/week

Advanced theory and practice in public speaking. Simulated public speaking situations, audience analysis, and rhetorical strategies will be emphasized. Students will prepare and present a variety of speeches. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121. Prerequisite: Pass SP-111 or instructor consent. Corequisites: SP-221 or SP-222 or SP-223.

SP-167 Parliamentary Procedure

4 credits, not offered every term
4 class hours/week

The principles and practice of parliamentary procedure to develop skills in conducting business during meetings. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121. Prerequisite: Pass SP-111 or instructor consent. Corequisites: SP-221 or SP-222 or SP-223.

SP-211 Communication Theory

4 credits, not offered every year
4 class hours/week

Designed to enhance understanding of the theoretical assumptions and methods of inquiry in the study of human communication. Focuses on theories and empirical research across diverse contexts in communications. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115. Prerequisites: Pass SP-100 or pass SP-111 & pass WR-121.

SP-218 Interpersonal Communication

4 credits, not offered every term
4 class hours/week

The interpersonal communication process examined through lectures, reading, and exercises. Subjects include goal-setting, first impressions, conflict resolution, non-verbal messages, image building and assertiveness. Note: Certain sections of SP-218 meet the computer literacy requirement. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121. Also offered as an online course.

SP-219 Small Group Communication

4 credits, not offered every term
4 class hours/week

Theories and practices of small group communication through group discussion, reading and written exercises. Emphasis on effective group communication, leadership skills, and problem-solving in small groups. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

SP-221 Speech & Debate: Forensics

1 credit, Fall
3 lab hours/week

Practical application of public speaking skills in a variety of settings. Preparation for and participation in intercollegiate forensic activities. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121. Prerequisite: Pass SP-111 or instructor consent. Corequisites: SP-129 or SP-150 or SP-167.

SP-222 Speech & Debate: Forensics

1 credit, Winter
3 lab hours/week

Practical application of public speaking skills in a variety of settings. Preparation for and participation in intercollegiate forensic activities. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121. Prerequisite: Pass SP-111 or instructor consent. Corequisites: SP-129 or SP-150 or SP-167.

SP-223 Speech & Debate: Forensics

1 credit, Spring
3 lab hours/week

Practical application of public speaking skills in a variety of settings. Preparation for and participation in intercollegiate forensic activities. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121. Prerequisite: Pass SP-111 or instructor consent. Corequisites: SP-129 or SP-150 or SP-167.

SP-224 Speech & Debate: Forensics

1 credit, Fall
3 lab hours/week

Practical application of public speaking skills in a variety of settings. Preparation for and participation in intercollegiate forensic activities. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121. Prerequisite: Pass SP-111 or instructor consent. Corequisites: SP-229 or SP-250 or SP-267.

SP-225 Speech & Debate: Forensics

1 credit, Winter
3 lab hours/week

Practical application of public speaking skills in a variety of settings. Preparation for and participation in intercollegiate forensic activities. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121. Prerequisite: Pass SP-111 or instructor consent. Corequisites: SP-229 or SP-250 or SP-267.

SP-226 Speech & Debate: Forensics

1 credit, Spring
3 lab hours/week

Practical application of public speaking skills in a variety of settings. Preparation for and participation in intercollegiate forensic activities. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121. Prerequisite: Pass SP-111 or instructor consent. Corequisites: SP-229 or SP-250 or SP-267.

SP-229 Oral Interpretation

4 credits, not offered every term
4 class hours/week

Oral interpretation of literature from the areas of prose, poetry and drama. Analyze specific literary works and communicate that understanding through performance. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121. Prerequisite: Pass SP-111 or instructor consent. Corequisites: SP-224 or SP-225 or SP-226.

SP-250 Competitive Platform Speaking

4 credits, not offered every term
4 class hours/week

Advanced theory and practice in public speaking. Simulated public speaking situations, audience analysis, and rhetorical strategies will be emphasized. Students will prepare and present a variety of speeches. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121. Prerequisite: Pass SP-111 or instructor consent. Corequisites: SP-224 or SP-225 or SP-226.

SP-267 Parliamentary Procedure

4 credits, not offered every term
4 class hours/week

The principles and practice of parliamentary procedure to develop skills in conducting business during meetings. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121. Prerequisite: Pass SP-111 or instructor consent. Corequisites: SP-224 or SP-225 or SP-226.

SP-280 Speech/CWE

2-6 credits, Fall/Winter/Spring
1.5 class, 6-18 job site hours/week

Cooperative work experience. Provides students with on-the-job work experience in the field of communications. Required: Instructor consent & a CWE seminar.

SPN**Spanish****SPN-101 First-Year Spanish**
4 credits, Fall/Winter/Summer
4 class hours/week

First term of a three-term foundational, multimedia course for beginners. Initial emphasis is on speaking and listening comprehension, with secondary emphasis on reading and writing. Various cultural themes are presented. SPN-101/102/103 must be taken in sequence. Offered summer term as an intensive 3-week course. Recommended: Placement in RD-115 & placement in WR-121.

SPN-102 First-Year Spanish
4 credits, Summer/Winter
4 class hours/week

Second of a three-term foundational, multimedia course for beginners. Initial emphasis is on speaking and listening comprehension, with secondary emphasis on reading and writing. Various cultural themes are presented. SPN-101/102/103 must be taken in sequence. Offered summer term as intensive 3-week course. Prerequisite: Pass SPN-101 or instructor consent.

SPN-103 First-Year Spanish
4 credits, Spring/Summer
4 class hours/week

Third of a three-term foundational, multimedia course for beginners. Initial emphasis is on speaking and listening comprehension, with secondary emphasis on reading and writing. Various cultural themes are presented. SPN-101/102/103 must be taken in sequence. Offered summer term as intensive 3-week course. Prerequisite: Pass SPN-102 or instructor consent.

SPN-120 Spanish for Health Professionals
3 credits, not offered every year
3 class hours/week

A course for students enrolled in the CCC nursing program and other health care professionals. Presents the specialized vocabulary needed to communicate with Spanish-speaking patients in health-care settings. Emphasizes personalized questions, grammatical exercises, dialogues, role-playing activities, and situations that resemble the use of Spanish in daily contact with patients. Prerequisite: SPN-101 or instructor consent.

SPN-201 Second-Year Spanish
4 credits, Fall
4 class hours/week

First of a three-term intermediate, multimedia course. Concentration is on speaking, listening comprehension, reading, and writing. Explores cultural differences among Spanish-speaking countries and between the latter and European-American culture. Meets the arts & letters requirement for the AAOT degree. Prerequisite: Pass SPN-103 or instructor consent.

SPN-202 Second-Year Spanish
4 credits, Winter
4 class hours/week

Second of a three-term, intermediate, multimedia course. Concentration is on speaking, listening comprehension, reading, and writing. Explores cultural differences among Spanish-speaking countries and between the latter and European-American culture. Meets the arts & letters requirement for the AAOT degree. Prerequisite: Pass SPN-201 or instructor consent.

SPN-203 Second-Year Spanish
4 credits, Spring
4 class hours/week

Third of a three-term, intermediate, multimedia course. Concentration is on speaking, listening comprehension, reading, and writing. Explores cultural differences among Spanish-speaking countries and between the latter and European-American culture. Meets the arts & letters requirement for the AAOT degree. Prerequisite: Pass SPN-202 or instructor consent.

SPN-211 Advanced Spanish Conversation
3 credits, Fall
3 class hours/week

Emphasis will be to continue to develop oral proficiency beyond that achieved by the end of second year Spanish including expanding vocabulary and broadening the student's cultural awareness of the Spanish-speaking world. Grammatical explanations will be kept to a minimum. Meets the arts & letters requirement for the AAOT degree. Prerequisite: Pass SPN-203 or instructor consent.

SPN-212 Advanced Spanish Conversation
3 credits, Winter
3 class hours/week

Emphasis will be to continue to develop oral proficiency beyond that achieved by the end of second year Spanish including expanding vocabulary and broadening the student's cultural awareness of the Spanish-speaking world. Grammatical explanations will be kept to a minimum. Meets the arts & letters requirement for the AAOT degree. Prerequisite: Pass SPN-203 or instructor consent.

SPN-213 Advanced Spanish Conversation
3 credits, Spring
3 class hours/week

Emphasis will be to continue to develop oral proficiency beyond that achieved by the end of second year Spanish including expanding vocabulary and broadening the student's cultural awareness of the Spanish-speaking world. Grammatical explanations will be kept to a minimum. Meets the arts & letters requirement for the AAOT degree. Prerequisite: Pass SPN-203 or instructor consent.

SPN-280 Spanish/CWE
2-6 credits

Fall/Winter/Spring/Summer
1.5 class, 6-18 job site hours/week
Cooperative work experience. Provides students with on-the-job work experience in the field of Spanish. Required: Instructor consent & a CWE seminar.

SSC**Social Science Inquiry****SSC-150 The Columbia Basin: Watershed of the Great Northwest [C]**
5 credits, Fall
5 class hours/week

The Columbia River watershed dominates the culture and economy of the Pacific Northwest, past, present, and future. This course explores the Columbia River Basin and its natural and human history. Includes field trips. Meets the social science requirement for the AAOT degree and the University Studies Freshman Inquiry requirement at PSU. Meets computer literacy requirement. Recommended: Placement in RD-115.

SSC-151 The Columbia Basin: Watershed of the Great Northwest [C]
5 credits, Winter
5 class hours/week

The Columbia River is the largest river in the western United States. This course focuses on social issues of the management of the Columbia River Basin and its resources, with Portland as the metropolis of the watershed. Includes field trips. Meets the social science requirement for the AAOT degree and the University Studies Freshman Inquiry requirement at PSU. Meets computer literacy requirement. Prerequisite: Pass SSC-150.

SSC-152 The Columbia Basin: Watershed of the Great Northwest [C]
5 credits, Spring
5 class hours/week

Issues and opportunities associated with the Columbia River watershed are of immediate importance. This course grapples with the future of the Columbia River Basin and the living organisms (including humans) dwelling in it. Includes field trips. Meets the social science requirement for the AAOT degree and the University Studies Freshman Inquiry requirement at PSU. Meets computer literacy requirement. Prerequisite: Pass SSC-151.

SSC-160 Faith & Reason [C]
5 credits, Fall
5 class hours/week

Introduction to classical philosophy, sacred texts, modern fiction, poetry, theology, evolutionary biology, and cosmology. Consideration of how personal concepts of faith and reason and institutions of science and religion, shape personal intellectual landscapes. Meets the social science requirement for the AAOT degree and the University Studies Freshman Inquiry requirement at PSU. Meets computer literacy requirement. Recommended: Placement in RD-115.

SSC-161 Faith & Reason [C]
5 credits, Winter
5 class hours/week

Introduction to classical philosophy, sacred texts, modern fiction, poetry, theology, evolutionary biology, and cosmology. Consideration of how personal concepts of faith and reason and institutions of science and religion, shape personal intellectual landscapes. Meets the social science requirement for the AAOT degree and the University Studies Freshman Inquiry requirement at PSU. Meets computer literacy requirement. Prerequisite: SSC-160.

SSC-162 Faith & Reason [C]
5 credits, Spring
5 class hours/week

Introduction to classical philosophy, sacred texts, modern fiction, poetry, theology, evolutionary biology, and cosmology. Consideration of how personal concepts of faith and reason and institutions of science and religion, shape personal intellectual landscape. Meets the social science requirement for the AAOT degree and the University Studies Freshman Inquiry requirement at PSU. Meets computer literacy requirement. Prerequisite: SSC-161.

SSC-170 Metamorphoses [C]
5 credits, not offered every year
3 class hours/week + 2 hours/week
TBA

Investigates the process of change within human cultures and individuals. By exploring myth, science, art, religion, and literature, we approach a better understanding of the ability of humans to change. Meets the social science requirement for the AAOT degree and the University Studies Freshman Inquiry requirement at PSU. Meets computer literacy requirement. Recommended: Placement in RD-115 & placement in WR-121.

SSC-171 Metamorphoses [C]
5 credits, not offered every year
3 class hours/week + 2 hours/week
TBA

Explores the effect of change on individuals and societies. Helps students evaluate the probable success of various means of promoting personal, social/cultural/political, and paradigmatic change through readings in Darwin, Marx, Gandhi, and Kafka. Meets the social science requirement for the AAOT degree and the University Studies Freshman Inquiry requirement at PSU. Meets computer literacy requirement. Recommended: Placement in RD-115 & placement in WR-121.

SSC-172 Metamorphoses [C]
5 credits, not offered every year
3 class hours/week + 2 hours/week
TBA

Explores, analyzes, and evaluates the changes occurring now. Through independent study, peer instruction, website and digital portfolio development, students will examine the intersections of cultural, social, individual, religious, paradigmatic shifts happening in our own lifetimes. Meets the social science requirement for the AAOT degree and the University Studies Freshman Inquiry requirement at PSU. Meets computer literacy requirement. Recommended: Placement in RD-115 & placement in WR-121.

SSC-180 Pathway to Sustainability
5 credits, not offered every year
5 class hours/week

Can we create a more sustainable and just world? We will question our assumptions regarding economic models, democracy, our relationships with the environment, and social structures? What are the roots of the current ecological crisis? Meets the social science requirement for the AAOT degree and the University Studies Freshman Inquiry requirement at PSU. Recommended: Placement in RD-115.

SSC-181 Pathway to Sustainability
5 credits, not offered every year
5 class hours/week

Can we create a more sustainable and just world? How do socially meaningful changes come about? What are the ecological and social repercussions of the choices we make? Are ecological and social justice concerns linked? Meets the social science requirement for the AAOT degree and the University Studies Freshman Inquiry requirement at PSU. Recommended: Placement in RD-115.

SSC-182 Pathway to Sustainability
5 credits, not offered every year
5 class hours/week

Can we create a more sustainable and just world? What can our personal roles in change be? How can we stimulate local sustainable economies? What analysis is useful in assessing ecological impacts? Meets the social science requirement for the AAOT degree and the University Studies Freshman Inquiry requirement at PSU. Recommended: Placement in RD-115.

SSC-190 Human Nature

5 credits, not offered every year
5 class hours/week

This course explores the complex connections between humans and nature and specifically asks, "What is human nature?" We will look at humans as biological organisms, language speakers, constructors and constructions of society and culture. Meets the social science requirement for the AAOT degree and the University Studies Freshman Inquiry requirement at PSU. Recommended: Placement in RD-115.

SSC-191 Human Nature

5 credits, not offered every year
5 class hours/week

Explores the complex connections between humans and nature. How have we described and represented nature to ourselves? How have humans over the course of time understood themselves and interacted with the natural world? Meets the social science requirement for the AAOT degree and the University Studies Freshman Inquiry requirement at PSU. Recommended: Placement in RD-115.

SSC-192 Human Nature

5 credits, not offered every year
5 class hours/week

Explores the complex connections between humans and nature. How have our understandings of nature and human nature changed? Do humans have unique responsibilities toward the natural world and, if so, what are they? Meets the social science requirement for the AAOT degree and the University Studies Freshman Inquiry requirement at PSU. Recommended: Placement in RD-115.

SSC-220 Modern War & American Popular Culture

4 credits, not offered every term
4 class hours/week

Emphasizes observation, reflection, description, and critical thinking in order to gain a deeper understanding of the war in Vietnam and the Gulf War as seminal events represented in American popular culture. Meets the social science requirement for the AAOT degree and the University Studies Sophomore Inquiry requirement at PSU. Recommended: Placement in RD-115 & placement in WR-121.

SSC-221 Science in American Popular Culture

4 credits, not offered every term
4 class hours/week

Emphasizes observations, reflection, description, and critical thinking in order to gain a deeper understanding of the development of evolutionary theory, catastrophe theory, and historical disasters as represented in American popular culture. Meets the social science requirement for the AAOT degree and the University Studies Sophomore Inquiry requirement at PSU. Recommended: Placement in RD-115 & placement in WR-121.

SSC-222 Civil Rights in American Popular Culture

4 credits, not offered every term
4 class hours/week

Emphasizes observations, reflection, description, and critical thinking in order to gain a deeper understanding of civil rights history as represented in American popular culture and the ways in which the concepts of the civil rights have expanded. Meets the social science requirement for the AAOT degree and the University Studies Sophomore Inquiry requirement at PSU. Recommended: Placement in RD-115 & placement in WR-121.

SSC-223 The Humanistic Tradition

4 credits, not offered every year
4 class hours/week

Multi-disciplinary examination of major issues and topics from prehistory through the middle ages including perspectives from anthropology, history, art, literature, philosophy, religion, and science. Meets the social science requirement for the AAOT degree and the University Studies Sophomore Inquiry requirement at PSU. Recommended: Placement in RD-115.

SSC-224 The Humanistic Tradition

4 credits, not offered every year
4 class hours/week

Multi-disciplinary examination of major issues and topics from the Renaissance Enlightenment from anthropology, history, art, literature, philosophy, religion, and science. Meets the social science requirement for the AAOT degree and the University Studies Sophomore Inquiry requirement at PSU. Recommended: Placement in RD-115.

SSC-225 The Humanistic Tradition

4 credits, not offered every year
4 class hours/week

Multi-disciplinary examination of major issues and topics from 19th & 20th centuries including perspectives from anthropology, history, art, literature, philosophy, religion, and science. Meets the social science requirement for the AAOT degree and the University Studies Sophomore Inquiry requirement at PSU. Recommended: Placement in RD-115.

SSC-226 Science & Religion

4 credits, not offered every term
4 class hours/week

Examines different aspects of science and religion and how scientific inquiry affects beliefs. Discusses historical development of astronomy, cosmology, physics, biology, and theology. Meets the social science requirement for the AAOT degree and the University Studies Sophomore Inquiry requirement at PSU. Recommended: Placement in RD-115 & placement in WR-121.

SSC-227 Civil War & Psychology

4 credits, not offered every term
4 class hours/week

Explores causes and effects of the Civil War, with a special emphasis on social, cultural, and economic factors. Analyzes the character and personality of civilian and military leaders of both the North and South. Meets the social science requirement for the AAOT degree and the University Studies Sophomore Inquiry requirement at PSU. Recommended: Placement in RD-115 & placement in WR-121.

SSC-228 The Renaissance

4 credits, not offered every term
4 class hours/week

Students gain insight into its influence on architecture, emphasis upon the development of individual personality, confidence in the power of formal education, belief in the citizen's participation in public life, and the rise of scientific inquiry. Meets the social science requirement for the AAOT degree and the University Studies Sophomore Inquiry requirement at PSU. Recommended: Placement in RD-115 & placement in WR-121.

SSC-229 Latin American Studies
4 credits, not offered every term
4 class hours/week

Survey and analysis of Latin America from pre-colonization to the modern era. Focuses on the political, social, cultural, and economic structure of Latin America. Discusses race and class relations, imperialism, revolution, neo-colonialism, and dependency theory. Meets the social science requirement for the AAOT degree and the University Studies Sophomore Inquiry requirement at PSU. Recommended: Placement in RD-115 & placement in WR-121.

SSC-230 Gender & Material Culture
4 credits, not offered every term
4 class hours/week

Provides an in-depth study of social and cultural significance of material culture as it applies to gender, within a historical context. Focuses on the material world of American society from the colonial era to the present. Meets the social science requirement for the AAOT degree and the University Studies Sophomore Inquiry requirement at PSU. Recommended: Placement in RD-115 & placement in WR-121.

SSC-231 Engendered Identities
4 credits, not offered every term
4 class hours/week

Examines the various perspectives on the development of gender identities and looks specifically at the ways in which concepts of femininity and masculinity have shaped cultural images, identities and experiences cross-culturally, globally and historically. Meets the social science requirement for the AAOT degree and the University Studies Sophomore Inquiry requirement at PSU. Recommended: Placement in RD-115 & placement in WR-121.

SSC-232 Women in American History
4 credits, not offered every term
4 class hours/week

Explores changing roles of women in American history. Emphasis on concepts of separate spheres, public/private realms, development of women's rights, role of women in reform and social movements, and women's roles and experiences across race and class. Meets the social science requirement for the AAOT degree and the University Studies Sophomore Inquiry requirement at PSU. Recommended: Placement in RD-115 & placement in WR-121.

SSC-233 Electronic Culture [C]
4 credits, not offered every term
4 class hours/week

An introduction to the interdisciplinary field of electronic culture, focusing on the use of electronic computer technology by individuals and groups. Examines transformation of self, identity, communication, and development of electronic communities and subcultures. Meets the social science requirement for the AAOT degree and the University Studies Sophomore Inquiry requirement at PSU. Recommended: Placement in RD-115 & placement in WR-121.

SSC-234 Freedom, Privacy and Technology [C]
4 credits, not offered every term
4 class hours/week

Investigation of how the development of computer based technologies is transforming the notion of privacy, anonymity, and individual freedom. Explores social impact of knowledge and data gathering techniques, surveillance, mass marketing, and commercialization of online world. Meets the social science requirement for the AAOT degree and the University Studies Sophomore Inquiry requirement at PSU. Recommended: Placement in RD-115 & placement in WR-121.

TA

Theatre Arts

TA-101 Appreciation of Theatre Arts
4 credits, Fall
4 hours/week

Develop personal understanding of theatre by attending productions. Plays are reviewed and evaluated in written form and in group discussion. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in WR-121.

TA-102 Appreciation of Theatre Arts
4 credits, Winter
4 hours/week

Develop personal understanding of theatre by attending productions. Plays are reviewed and evaluated in written form and in group discussion. Meets the arts & letters requirement for the AAOT degree.

TA-103 Appreciation of Theatre Arts
4 credits, Spring
4 hours/week

Develop personal understanding of theatre by attending productions. Plays are reviewed and evaluated in written form and in group discussion. Meets the arts & letters requirement for the AAOT degree.

TA-111 Fundamentals of Technical Theatre
4 credits, Fall

3 class, 3 lab hours/week

Study and practice in techniques of assembling various types of productions for presentation. Includes basic principles and techniques in stage design, construction and lighting. Meets the arts & letters requirement for the AAOT degree.

TA-112 Fundamentals of Technical Theatre

4 credits, Winter

3 class, 3 lab hours/week

Study and practice in techniques of assembling various types of productions for presentation. Includes basic principles and techniques in stage design, construction and lighting. Meets the arts & letters requirement for the AAOT degree.

TA-113 Fundamentals of Technical Theatre

4 credits, Spring

3 class, 3 lab hours/week

Study and practice in techniques of assembling various types of productions for presentation. Includes basic principles and techniques in stage design, construction and lighting. Meets the arts & letters requirement for the AAOT degree.

TA-141 Acting I
4 credits, Fall

4 class hours/week

Studies the methods, techniques and theories of acting as an art form. Performance of lab exercises and excerpts from plays are the basic teaching approaches. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

TA-142 Acting II
4 credits, Winter
4 class hours/week

Studies the methods, techniques and theories of acting as an art form. Performance of lab exercises and excerpts from plays are the basic teaching approaches. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & WR-121.

TA-143 Acting III
4 credits, Spring
4 class hours/week

Studies the methods, techniques, and theories of acting as an art form. Performance of lab exercises and excerpts from plays are the basic teaching approaches. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121. Prerequisite: Pass TA-141 or TA-142 or instructor's consent.

TA-153 Theatre Rehearsal/Performance
1-3 credits, Fall/Winter/Spring
3-9 lab hours/week

Training in theatre production through intensive study and rehearsal of scenes and plays for public performances. Meets the arts & letters requirement for the AAOT degree. Required: Instructor consent.

TA-195 One-Act Plays
1-3 credits, Fall/Winter/Spring
3-9 lab hours/week

Training in special forms of theatrical presentation through in-class intensive preparation, study, and program development for public presentation. Meets the arts & letters requirement for the AAOT degree. Required: Instructor consent.

TA-211 Technical Theatre Study
4 credits, Fall
3 class, 3 lab hours/week

Comprehensive study and practice in presentational graphics, scene design, lighting design, and chromatics. The full creative process of staging a production will be explored through aesthetic research and design projects. Includes hands-on participation in CCC's mainstage production. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121. Prerequisites: Pass TA-111, pass TA-112 & pass TA-113.

TA-212 Technical Theatre Study
4 credits, Winter
3 class, 3 lab hours/week

Comprehensive study and practice in presentational graphics, scene design, lighting design, and chromatics. The full creative process of staging a production will be explored through aesthetic research and design projects. Includes hands-on participation in CCC's mainstage production. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121. Prerequisites: Pass TA-111, pass TA-112 & pass TA-113.

TA-213 Technical Theatre Study
4 credits, Spring
3 class, 3 lab hours/week

Comprehensive study and practice in presentational graphics, scene design, lighting design, and chromatics. The full creative process of staging a production will be explored through aesthetic research and design projects. Includes hands-on participation in CCC's mainstage production. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121. Prerequisites: Pass TA-111, pass TA-112 & pass TA-113.

TA-241 Shakespeare for Actors
4 credits, not offered every term
4 class hours/week

Explore character development and performance with particular emphasis on style, genre, language and rhythm. Lecture, discussion and student presentations based on select texts. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121. Prerequisites: Pass TA-141, pass TA-142 & pass TA-143.

TA-242 Acting Techniques: Scene Study
4 credits, not offered every term
4 class hours/week

An overview of Western theater history from the time of the Greeks to the present. Lecture, discussion and student presentation, including performances from selected scenes, will be used to explore each era of theater. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement into RD-115 & WR-121. Prerequisites: Pass TA-141, pass TA-142 & pass TA-143.

TA-243 Play Direction
4 credits, not offered every term
4 class hours/week

Theory, philosophy and practice of play directing. Casting and rehearsal of players, production organization, script analysis and scene building. Meets the arts & letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121. Prerequisites: Pass TA-141, pass TA-142 & pass TA-143.

TA-253 Theatre Rehearsal/Performance
1-3 credits, Fall/Winter/Spring
3-9 lab hours/week

Training in theatre production through intensive study and rehearsal of scenes and plays for public performances. Meets the arts & letters requirement for the AAOT degree. Required: Instructor consent.

TA-280 Theatre/CWE
2-6 credits, Fall/Winter/Spring
1.5 class, 6-18 job site hours/week

Cooperative work experience. Provides student with a learning experience related to course of study and career goal. Major emphasis will be given to on-the-job experience and training. Required: Instructor consent & a CWE seminar.

TA-295 One-Act Plays
1-3 credits, Fall/Winter/Spring
3-9 lab hours/week

Training in special forms of theatrical presentation through in-class intensive preparation, study, and program development for public presentation. Meets the arts & letters requirement for the AAOT degree. Required: Instructor consent.

TPH

Courses with this prefix may not transfer with credit to a four-year institution unless applied as part of the 12 allowable professional technical credits for the AAOT or ASOT-Business.

Technical Physics

See also Physics (PH).

TPH-100 Technical Physics

3 credits, Winter

3 class, 2 lab hours/week

Designed to meet the needs of a technical program. Includes vectors, equations of motion, forces, work, energy, and power. Prerequisite: Pass MTH-080.

WLD

Courses with this prefix may not transfer with credit to a four-year institution unless applied as part of the 12 allowable professional technical credits for the AAOT or ASOT-Business.

Welding Technology

Many of these classes can be customized to meet the needs of the industry. For additional information on a customized class for your company, contact the Customized Training Department at 503-657-6958, ext. 3523.

WLD-100 Welders' Print Reading I

3 credits, Winter

3 class hours/week

Provides instruction in reading and interpretation of sketches and prints common in welding practice. Conventional drafting symbols, welding symbols, development of basic shop drawings, & projects.

WLD-102 Introduction to Welding

2 credits

Fall/Winter/Spring/Summer

4 class hours/week

Designed for the beginner and experimental welder. Includes: oxy-acetylene, stick, and wire feed welding, oxy-acetylene and plasma arc cutting, bending, coloring and finishing techniques.

WLD-111 Shielded Metal Arc Welding (SMAW)

2-8 credits, Fall

16 class hours/week

Provides students with the opportunity to acquire knowledge and skills to perform fillet and groove welds in all positions with the SMAW process. Oxy-fuel cutting, air carbon arc cutting and gouging also covered.

WLD-113 GMAW/FCAW Welding (Wirefeed)

2-8 credits, Winter

16 class hours/week

Provides opportunity to acquire the knowledge and skills to perform fillet and groove welds in all positions with GMAW and FCAW. Oxy-fuel cutting also covered.

WLD-115 GTAW Welding (TIG)

4-8 credits, Spring

16 class hours/week

Provides opportunity to acquire knowledge and skills to perform fillet and groove welds in various positions on steel, stainless steel and aluminum with the GTAW process. Plasma cutting also covered.

WLD-150 Welding Processes

4 credits, Fall/Winter/Spring/Summer

8 class hours/week

Oxy-acetylene welding, brazing, and cutting, stick welding, and wire feed. Includes: safety, electrical fundamentals, routine maintenance, minor repair, and terms and definitions.

WLD-200 Welders' Print Reading II

3 credits, Spring

3 class hours/week

Provides instruction in reading and interpretation of sketches and prints common in welding practice. Development of basic shop drawing views and projections, basic layout math review, ISO and AWS symbols, basic weld joints are covered. Recommended: WLD-100

WLD-211 Advanced SMAW Welding

4 credits, Fall

8 class hours/week

Provides knowledge and skills to perform welds in all positions with a variety of different electrodes using the SMAW process. Groove welds on plate and pipe, industrial cutting processes, welding theory and procedures are included. Recommended: WLD-111

WLD-213 Advanced GMAW/FCAW Welding

4 credits, Winter

8 class hours/week

Provides knowledge and skills to perform welds in all positions on plain carbon steel, stainless steel and aluminum using the GMAW and FCAW processes. Groove welds on plate and pipe, and industrial-cutting processes, shop print reading are included. Recommended: WLD-113

WLD-215 Advanced GTAW Welding

4 credits, Spring

8 class hours/week

Provides knowledge and skills to perform welds in all positions on plain carbon steel, stainless steel and aluminum using the GTAW process. Groove welds on plate and pipe. Recommended: WLD-115

WLD-250 Welding Fabrication I

Beginning Project

4 credits, Fall

8 class hours/week

Instruction in fabrication techniques including blueprint reading, layout, sketching, bills of material, job cost calculations, measuring, fitting, cutting and welding. A project will be assigned to each student.

WLD-251 Welding Fabrication II

Intermediate Project

4 credits, Winter

8 class hours/week

Students will be assigned an intermediate fabrication project based on skills learned in WLD-250.

WLD-252 Welding Fabrication III

Advanced Project

4 credits, Spring

8 class hours/week

Students will use techniques from Fabrication I and II to build an advanced project. Student will be responsible for all aspects of managing the project to completion.

WLD-260A AWS Welder Certification,

1 Plate

0 credit, Fall/Winter/Spring/Summer

Approx. 4 class hours/1 session

Welder certification in accordance with AWS D1.1 in flat, horizontal, vertical, or overhead positions for students enrolled in any CCC welding course. A city card is available for an additional fee.

WLD-260B AWS Welder Certification, 2 Plates or Pipe
 0 credit, Fall/Winter/Spring/Summer
 Approx. 4 class hours/1 session
 Welder certification in any two positions, (flat, horizontal, vertical, overhead), in accordance with AWS D1.1 for students enrolled in any CCC welding course. A city card is available for an additional fee.

WLD-260C AWS Welder Certification on Pipe
 0 credit, Fall/Winter/Spring/Summer
 4 class hours/1 session (approx.)
 This is a 4 hour block of time for a student to take a welding certification test. The type of test will depend on the student's choice of welding process, joint design, and position. After welding, the pipe will be sent to a testing lab for bend or x-ray testing.

WLD-261 Welding Special Projects
 1-11 credits
 Fall/Winter/Spring/Summer
 25 class hours per week cumulative
 Allows students to improve their welding skills while working on instructor-approved projects or in preparation for taking their AWS certification test and is a requirement in the welding technology AAS degree. May be repeated. Required: prior welding experience.

WLD-280 Welding Technology/CWE
 2-6 credits
 Fall/Winter/Spring/Summer
 6-18 job site hours/week
 Cooperative work experience. Practical experience in the welding trades. Coordination of instruction will occur with industry and the welding and cooperative work departments. Required: Instructor consent & a CWE seminar.

WQT

Courses with this prefix may not transfer with credit to a four-year institution unless applied as part of the 12 allowable professional technical credits for the AAOT or ASOT-Business.

Water & Environmental Technology

WQT-010 Wastewater Operations I
 3 credits, Fall
 3 class hours/week

For professional upgrade only. Does not meet the requirements for the certificate or degree. Introduction to the fundamentals of wastewater treatment plant operation. Includes collections systems, preliminary and primary treatment, waste characteristics including organic removals, and solids profiles.

WQT-011 Waterworks Operations I
 3 credits, Fall
 3 class hours/week

For professional upgrade only. Does not meet the requirements for the certificate or degree. Introduction to municipal drinking water treatment and distribution systems. Basic waterworks hydraulics, drinking water regulations, waterworks math, waterworks bacteriology, and introduction to water disinfection.

WQT-020 Wastewater Operations II
 3 credits, Winter
 3 class hours/week

For professional upgrade only. Does not meet the requirements for the certificate or degree. Secondary wastewater treatment alternatives with municipal application. Fixed and suspended film systems and clarification process. Includes biological sludge treatment. Prerequisite: Pass WQT-010.

WQT-021 Waterworks Operations II
 3 credits, Winter
 3 class hours/week

For professional upgrade only. Does not meet the requirements for the certificate or degree. Basic hydrology, ground water and surface water sources, well construction and operation, introduction to water chemistry, waterworks hydraulics, and fundamentals of pumps and pumping. Prerequisite: Pass WQT-011.

WQT-030 Wastewater Operations III
 3 credits, Spring
 3 class hours/week

For professional upgrade only. Does not meet the requirements for the certificate or degree. Design, operation, process control, and maintenance of treatment facilities. Current treatment processes discussed in detail with particular attention given to biological sludge handling process. No lab requirement for this course. Prerequisite: Pass WQT-020.

WQT-031 Water Treatment
 3 credits, Spring
 3 class hours/week

For professional upgrade only. Does not meet the requirements for the certificate or degree. Design, operation, and process control of water treatment plants. Includes water chemistry, related math, coagulation, sedimentation, filtration, and disinfection. Review for Oregon Operator certification exams. No lab requirement for this course. Prerequisite: Pass WQT-021.

WQT-110 Wastewater Operations I
 3 credits, Fall
 3 class hours/week

Introduction to the fundamentals of wastewater operations. Includes collections systems, preliminary and primary treatment, waste characteristics including organic removals, and solids profiles. Prerequisite: Pass MTH-065. Corequisite: MTH-082.

WQT-111 Waterworks Operations I
 3 credits, Fall
 3 class hours/week

Introduction to municipal drinking water treatment and distribution systems. Basic waterworks hydraulics, drinking water regulations, waterworks math, waterworks bacteriology, and introduction to water disinfection. Also offered as an online course. Prerequisite: Pass MTH-065. Corequisite: MTH-082.

WQT-120 Wastewater Operations II
 3 credits, Winter
 3 class hours/week

Secondary wastewater treatment alternatives with municipal application. Fixed and suspended film systems and clarification process. Prerequisite: Pass WQT-110. Corequisite: MTH-082.

WQT-121 Waterworks Operations II

3 credits, Winter
3 class hours/week

Basic hydrology, ground water and surface water sources, well construction and operation, introduction to water chemistry, waterworks hydraulics, and fundamentals of pumps and pumping. Also offered as an online course. Prerequisite: Pass WQT-111. Corequisite: MTH-082.

WQT-122 Water Distribution/Wastewater Collection Systems

3 credits, Winter
3 class hours/week

Elementary engineering aspects of water distribution and wastewater collection systems. System components, construction materials, pump station design, and related topics.

WQT-123 Environmental Chemistry I

3 credits, Winter
2 class, 4 lab hours/week

Theory and applied laboratory techniques for testing water and wastewater. Students will test wastewater for NPDES required tests. Prerequisite: Pass CH-104.

WQT-125 High Purity Water Production I

3 credits, Winter
3 class hours/week

Introduction to the production of high purity water for the semiconductor, pharmaceutical, and electric power generating industries. Fundamentals of high purity water chemistry, reverse osmosis treatment, ion exchange treatment, electrodeionization treatment, UV, ozonation, degassification, and microfiltration. Prerequisite: Pass CH-104. Corequisite: MTH-082.

WQT-130 Wastewater Operations III

4 credits, Spring
3 class, 3 lab hours/week

Design, operation, process control, and maintenance of treatment facilities. Current treatment processes discussed in detail with particular attention to biological sludge handling and processing. Lab includes field trips to local wastewater facilities. Prerequisite: Pass WQT-120.

WQT-131 Water Treatment

4 credits, Spring
3 class, 3 lab hours/week

Design, operation, and process control of water treatment plants. Includes water chemistry, coagulation, sedimentation, filtration, and disinfection procedures. Review for Oregon Operator certification exams. Lab includes field trips to local water treatment facilities. Prerequisite: Pass WQT-121.

WQT-132 Collection & Distribution Lab

1 credit, Spring
3 lab hours/week

Provides student with field exposure to water distribution systems and wastewater collection systems. Weekly field visits include cross-connection inspection, distribution valving, reservoirs, water metering/repair, pumping station operations, smoke testing, and CCTV.

WQT-134 Environmental Chemistry II

2 credits, Spring
1 class, 3 lab hour/week

Provides experience in test procedures required for wastewater treatment NPDES discharge permits and the drinking water industry. Prerequisite: Pass WQT-123.

WQT-135 High Purity Water Production II

4 credits, Spring
3 class, 3 lab hours/week

Operation of equipment and unit processes in the production of high purity water. Emphasis on process equipment sizing and design, process control and troubleshooting. Prerequisite: Pass WQT-125.

WQT-180 Water & Environmental Projects I

5 credits, Spring
2 class, 12 field hours/week

Practical work experience in a municipal, industrial treatment, distribution, or collection system. Placement in consulting firms, federal and state regulatory agencies, BLM, BPA, and other regulated governmental organizations.

WQT-241 Aquatic Microbiology

4 credits, Fall
3 class, 3 lab hours/week

Topics in applied microbiology. Methods to detect coliform group in water and wastewater, identification of filamentous bacteria in activated sludge, and identification of indicator protozoa in activated sludge. A bacteriological stream survey project is included. Prerequisite: Pass BI-204.

WQT-242 Hydraulics/Water & Wastewater

3 credits, Fall
3 class hours/week

Study of closed conduit and open channel flow. Includes hydrostatics, head-loss, pump characteristics, Bernoulli's and the energy equations, and basic characteristics of water. Prerequisite: Pass MTH-065.

WQT-245 Instrumentation and Control

4 credits, Fall
3 class, 3 lab hours/week

Methods used to monitor and control treatment processes in wastewater, water and high purity water facilities. Advanced water analysis to include typical monitoring of HPW treatment. Fundamentals of control loops, control systems and data management. Prerequisite: Pass WQT-135.

WQT-280 Water & Environmental Projects II

5 credits, Fall
2 class, 12 field hours/week

Practical experience in a municipal, public or private wastewater treatment plant of specific activated sludge design. Process loading criteria, data acquisition, trend charting, and relevant process strategies will be addressed.

WR**Writing****WR-080 Basic Writing Skills**

3 credits, Fall/Winter/Spring
3 class hours/week

Intense grammar and punctuation review for native English speakers who wish to develop or improve basic writing skills. Prerequisite: Placement in WR-080.

WR-090 Fundamentals of English

3 credits, Fall/Winter/Spring/Summer
3 class hours/week

Diagnostic and remedial approach to eliminating deficiencies in grammar, punctuation, and usage. Prerequisite: Placement in WR-090 or pass WR-080.

WR-095 Paragraph to Essay

3 credits, Fall/Winter/Spring/Summer
3 class hours/week

Preparatory study for transfer writing courses, with emphasis on paragraph construction and short papers. Recommended: Placement in RD-115. Prerequisite: Placement in WR-095 or pass WR-090.

WR-101 Communication Skills:**Occupational Writing**

3 credits, Fall/Winter/Spring/Summer
3 class hours/week

Develops basic modes of technical writing, including summaries, process analysis, instructions, and reports. Also offered as an online course. Recommended: Placement in RD-115. Prerequisite: Placement in WR-121 or pass WR-095.

WR-121 English Composition

3 credits, Fall/Winter/Spring/Summer
3 class hours/week

Methods of structure, content, and expository writing. Meets the writing requirement for the AAOT degree. Note: Certain sections of WR-121 meet the computer literacy requirement. Also offered as an online course. Recommended: Placement in RD-115. Prerequisite: Placement in WR-121 or pass WR-095.

WR-122 English Composition

3 credits, Fall/Winter/Spring/Summer
3 class hours/week

Style, logic, and argumentation. Meets the writing requirement for the AAOT degree. Note: Certain sections of WR-122 meet the computer literacy requirement. Also offered as an online course. Recommended: Placement in RD-115. Prerequisite: Pass WR-121.

WR-123 English Composition

3 credits, Fall/Winter/Spring/Summer
3 class hours/week

The research paper. Meets the writing requirement for the AAOT degree. Recommended: Placement in RD-115. Prerequisite: Pass WR-121 & pass WR-122.

WR-227 Technical Report Writing [C]

3 credits, Fall/Winter/Spring/Summer
3 class hours/week

Introduction to report writing, with emphasis on materials gathered from the fields of medicine, government, criminal justice, business, engineering, technology, science, and public relations. Stresses organization, form, and style. Meets computer literacy requirement. Meets the writing requirement for the AAOT degree. Also offered as an online course. Recommended: Placement in RD-115. Prerequisite: Pass WR-121 & pass WR-122.

WR-240 Creative Writing: Nonfiction

4 credits, Fall/Spring
4 class hours/week

Techniques of creative nonfiction writing and the development of critical appreciation of the art of writing personal essays, memoirs, nature or science writing, and literary journalism. Meets the arts & letters requirements for the AAOT degree. Recommended: Placement in RD-115. Prerequisite: Placement in WR-121 or instructor consent.

WR-241 Creative Writing: Fiction

4 credits, Fall/Winter
4 class hours/week

Techniques of creative writing and the development of critical appreciation of the art of writing fiction. Meets the arts & letters requirements for the AAOT degree. Recommended: Placement in RD-115. Prerequisite: Placement in WR-121 or instructor consent.

WR-242 Creative Writing: Poetry

4 credits, Fall/Winter
4 class hours/week

Techniques of creative writing and the development of critical appreciation of the art of writing poetry. Meets the arts & letters requirements for the AAOT degree. Recommended: Placement in RD-115. Prerequisite: Placement in WR-121 or instructor consent.

WR-243 Creative Writing: Playwriting

4 credits, not offered every term
4 class hours/week

Designed for students with previous writing experience who wish to learn the technique of playwriting, including the art of dialogue and the elements of dramatic structure. Meets the arts & letters requirements for the AAOT degree. Recommended: Placement in RD-115. Prerequisite: Placement in WR-121 or instructor consent.

WR-244 Advanced Fiction Writing

4 credits, Spring
4 class hours/week

Skill and knowledge development for fiction writers with previous experience. Meets the arts & letters requirements for the AAOT degree. Recommended: Placement in RD-115. Prerequisite: Pass WR-241 or instructor consent.

WR-245 Advanced Poetry Writing

4 credits, Spring
4 class hours/week

Technique and knowledge development for poetry writers with previous experience. Meets the arts & letters requirements for the AAOT degree. Recommended: Placement in RD-115. Prerequisite: Pass WR-242 or instructor consent.

WR-246 Editing & Publishing [C]

4 credits, Spring
4 class hours/week

Develops editing and publishing skills of students with an interest in creative writing and/or literary journal design, layout, and publication. Includes the production of the campus literary magazine. Desktop publishing experience recommended but not required. Meets the arts & letters requirements for the AAOT degree. Meets computer literacy requirement. Recommended: Placement in RD-115. Prerequisites: Pass WR-241 or pass WR-242 or pass WR-243 or pass WR-262 or instructor consent.

WR-247 Advanced Playwriting

4 credits, not offered every term
4 class hours/week

Designed for students with previous writing experience who wish to learn advanced techniques of playwriting. Includes the art of dialogue and the elements of dramatic structure. Meets the arts & letters requirements for the AAOT degree. Recommended: Placement in RD-115. Prerequisite: Pass WR-243 or instructor consent.

WR-262 Introduction to Screenwriting

4 credits, Winter
4 class hours/week

Explores the fundamentals of screenplay composition through the use of various writing exercises and workshop techniques. Discussion of dramatic structure and the elements of good storytelling. Students will review movie scenes and compose their own scenes to be read and discussed in class. Meets the arts & letters requirements for the AAOT degree. Recommended: Placement in RD-115. Prerequisite: Placement in WR-121 or instructor consent.

WR 263 Advanced Screenwriting

4 credits, Spring
4 class hours/week

Continuation in the development of students' competency in the fundamentals of screenplay composition through the use of various writing exercises and workshop techniques. Meets the arts & letters requirements for the AAOT degree. Recommended: Placement in RD-115. Prerequisite: Pass WR-262 or instructor consent.

WR-280 Writing/CWE

2-6 credits, Fall/Winter/Spring
1.5 class, 6-18 job site hours/week

Cooperative work experience. Provides students with on-the-job work experience in the field of writing. Required: Instructor consent & a CWE seminar.

WS***Women's Studies*****WS-101 Introduction to Women's Studies**

4 credits, not offered every term
4 class hours/week

Course will examine and analyze the position of women in society and critically explore social issues relevant to women's lives and feminism historically and in the future. Topics: family, education, work, health care, sexuality, and political/economic status. Meets the social science requirement for the AAOT degree. Recommended: Placement in RD-115.

Z***Zoology*****Z-201 General Zoology**

4 credits, not offered every year
3 class, 3 lab hours/week

Covers cellular and molecular basis of animal life including genetics, evolution, systematics, and protist diversity. Meets the science requirement for the AAOT degree. Recommended: Placement in MTH-105 or MTH-111; placement in RD-115 & placement in WR-121.

Z-202 General Zoology

4 credits, not offered every year
3 class, 3 lab hours/week

Covers the maintenance of the cellular environment, evolution of animal systems, and diversity of the less complex invertebrate animal phyla. Meets the science requirement for the AAOT degree. Recommended: Placement in MTH-105 or MTH-111; placement in RD-115 & placement in WR-121.

Z-203 General Zoology

4 credits, not offered every year
3 class, 3 lab hours/week

Covers diversity of the more complex invertebrate and vertebrate animal phyla. Includes animal behavior, distribution, ecology, and conservation. Meets the science requirement for the AAOT degree. Recommended: Pass MTH-105 or pass MTH-111; placement in RD-115 & placement in WR-121.

Z-280 Zoology/CWE

2-6 credits
Fall/Winter/Spring/Summer

1.5 class, 6-18 job site hours/week

Cooperative Work Experience. Provides students with on-the-job work experience in the field of Zoology. Required: Instructor consent & a CWE seminar.

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Academic Regulations

Attendance

You must be officially registered to attend class, and you are expected to attend the classes in which you're enrolled. You are responsible for all class work assigned. If you do not attend your first class session, and do not contact your instructor before the first class session, you *may* be administratively withdrawn from the class to accommodate wait-listed students. If you're withdrawn from a class under this procedure, you'll be notified by the Registrar's Office. If you used Financial Aid or Veterans benefits, you may owe a repayment.

Absences

Absences during religious holidays when the college is open will be accepted if notification is received before class begins.

Absences due to participation in college-sponsored field trips, intercollegiate functions and other trips may be excused through prior arrangement with your instructors. *Financial aid programs have specific attendance requirements. Contact the Student Financial Services Office for more information, ext. 2422.*

Adding & Dropping Classes Official Withdrawal

- To officially add or drop a course you must file a registration form request with the Registrar's Office via CougarTrax, by Telephone Reg, or in person. (Ceasing to attend class does not constitute official withdrawal.)
- Adding a course after the class has started requires the instructor's approval and signature on a registration form.
- Drops after the sixth week of the term (for full term courses) require the signature of the instructor and will appear on your transcript with a "w" in the grade column. In order to drop a course without responsibility for a grade, your registration request must be filed before the end of the sixth week of the term.
- No registration or adding/dropping are accepted after the eighth week of the term.

Administrative Withdraw

You may be administratively withdrawn from one or more of your classes under the following conditions:

1. If you did not attend the first class session and did not notify your instructor of your absence.
2. If you were unable to demonstrate completion of course prerequisite requirements.

Students withdrawn under these conditions will be notified by the Registrar's Office. If you are using Financial Aid or Veterans benefits, you may owe a repayment. Please check with these offices for additional information regarding your enrollment status and entitlement to benefits.

Wait List

You may be able to request a position on a class wait list if the class you want is full at the time of registration. Requests can be made via the Web, Telephone Registration or in person at the Enrollment Services Center in Roger Rook Hall at our Oregon City campus. You will be enrolled should an opening become available in the course you have requested. Students are enrolled from the wait list on a first-come, first-served and eligibility basis. Certain conditions may affect the eligibility of those requesting a wait list placement. These conditions are as follows:

1. Wait list seat load capacity has been met.
2. There is a "hold" on your student record that restricts registration.
3. There are course restrictions in place such as "instructor consent."
4. You are already enrolled in another section of the same course.
5. There is a time conflict with the course you have selected.
6. You have reached the maximum number of credits allowed (20) without additional authorization.
7. Class has already begun.

Frequently-asked question:

How do I know which courses transfer?

It is your responsibility to know the requirements of the college or university to which you intend to transfer and to meet those requirements. For assistance, see your faculty advisor or a staff member in the Advising & Counseling Center to help you create an educational plan to fit your program of study and the transfer requirements for the four-year institution where you plan to compete a bachelor's degree.

College Credits

The standard unit of measurement for college work is called a credit.

A full-time student is defined as someone enrolled in 12 or more credits in any one term. No student may enroll in more than 20 credits per term without approval from a counselor.

COURSES NUMBERED:

100 and above	College level courses resulting in transcribed academic credit which may be applied toward a degree and/or certificate. May also transfer to four-year colleges.
10 through 99	Courses that may result in transcribed academic credit which may or may not be applied toward a degree and/or certificate. May be transferable to other community colleges.*
1 through 8	Community education courses, workshops or seminars that carry no credit or application toward a degree and/or certificate.
9	Classes, seminars, workshops and training resulting in Continuing Education Units (CEUs). These courses are not transcribed as academic credit nor are they applicable toward a degree and/or certificate.

* Students should consult with a faculty advisor or an academic advisor in the Advising & Counseling Center to verify course eligibility towards degree/certificate requirements.

Variable Credit

Some courses are eligible for variable credit. These courses are noted in the *Schedule of Classes* with a "V" in the credit column. This option lets you pursue an individualized learning program. Notify your instructor of the number of credits you are pursuing.

You must register for the number of credits you expect to earn in that term.

Credit by Examination (Challenge Exam)

You can challenge a course for credit by taking an oral, written, performance examination, or a combination for course eligibility. Challenge exams are subject to the following limitations:

- Certain courses have been approved for challenge (see the Advising & Counseling Center).

- You must be enrolled at CCC and complete a minimum of three credits during the term in which you challenge a course.
- You may not challenge more than 12 credits per term.
- Challenge exams need to be completed by the eighth week of the term. Credit from challenge exams completed after the eighth week will be recorded on your transcript the following term.
- The per credit challenge fee must be paid prior to testing.

You may challenge a course by obtaining an application from the Enrollment Services Center or Advising & Counseling Center and contacting the college department responsible for instruction of the course. The exam is comprehensive, covering all the basic information and skills required of a student completing the course in the regular manner. The examination may be written, oral, performance or a combination. For more information call the Advising & Counseling Center, ext. 2213.

Grades

Letter grades are used to indicate the quality of work completed. To find your grade point average (GPA), divide the total number of grade points earned by the total number of credits attempted in classes graded A-F. Courses graded Pass/No Pass are excluded in calculating GPA. If you believe a grading error has occurred, you must notify your instructor immediately.

GRADE	EXPLANATION	POINTS/CREDIT HOUR
A	Excellent	4
B	Good	3
C	Average	2
D	Below Average	1
F	Fail	0
P	Pass, credit given, no grade points	N/A
N	No pass, no credit, no grade points	N/A
I	Incomplete, no credit, no grade points	N/A
X	Audit, no credit, no grade points	N/A
W	Withdrawn after sixth week of term, no credit, no grade points	N/A
UG	Unreported grade no credit, no grade points	N/A

Audit

An Audit allows you to attend class without responsibility for a grade. Audit carries no credit and does not contribute toward full-time student status. Audited courses do not qualify for Veterans or Social Security benefits, Financial Aid and athletic eligibility. Registration, tuition, fees and attendance standards for audited courses are the same as for credit courses. To change your status from audit to credit, or from credit to audit, please talk with your instructor and make these changes through the registration process before the end of the eighth week of the term.

Calendar

Clackamas Community College operates on the quarter system. Fall, winter and spring terms are 11 weeks in length and summer term classes are eight or 11 weeks in length. Credits as noted on transcripts are measured in quarter hours.

Final Exams

Final examinations take place the last week of each term (see the *Schedule of Classes* for exact dates and times). You must take finals at the scheduled time; exceptions will be made only for illness or other circumstances beyond your control, and must be approved by your instructor prior to scheduled exam time.

Honors

Students achieving a term GPA of 3.5 or better based on nine or more credits graded (A-F) will be placed on the CCC honor roll for fall, winter, or spring terms.

Incomplete

A grade of Incomplete (I) indicates that the quality of work is satisfactory, but an essential requirement of the course has not been completed. Incompletes are granted only for acceptable reasons and only with the instructor's consent. An Incomplete must be made up within one calendar year from the time it is received or it will remain on your transcript, and then the course must be repeated if credit is to be received.

You must make arrangements with the instructor to complete a course in which you've received an Incomplete.

Pass/No Pass

A Pass grade indicates satisfactory completion of the course (equivalent to a C or better). A No Pass grade means the course was not satisfactorily completed and no credit was granted. Some courses are offered only on a Pass/No Pass basis. Some courses offer the option to choose between Pass/No Pass and a letter grade and some courses may be taken for a letter grade only. If you'd like to be graded Pass/No Pass, and the course qualifies, you must tell your instructor by the end of the eighth week of the course.

Repeating Courses

You may repeat a course as many times as you choose. You must fill out a Repeated Course form in the Registrar's Office to request a recalculation of your GPA. A repeated course will reflect an "R" on your transcript. The grade (A, B, C, D, F) of your last attempt will be used in computing your cumulative GPA. Other attempts will be shown on your transcript, but will not be included in calculating your GPA.

Satisfactory Academic Progress

If you intend to register for six or more credits in a degree or certificate program, you are subject to standards of satisfactory academic progress.

The standards of academic progress are: completion of at least 50 percent of your enrolled credits (not including credits dropped or changed to audit), and a term GPA of 2.0 or greater. Failure to meet either standard will place you on alert status.

If you are on academic alert, you will be sent written notification of your status at the end of the term, including information on resources, tutoring and other options available to you. You must attend an educational planning session before the end of the next term of enrollment in order to draw up an educational plan for improving your academic work. This term will be called your academic alert term.

If you complete 50 percent of your courses and achieve a term GPA of 2.0 or greater during an academic alert term, but have a cumulative GPA less than 2.0, you may enroll for a second academic alert term. You must repeat the educational planning process.

If you do not complete 50 percent of your courses and/or do not achieve a term GPA of 2.0 or greater during an academic alert term, you will be prohibited from registering for college credit classes for one term (summer excluded). Upon re-enrollment, you must repeat the educational planning process.

If you enroll after a one-term restriction and still do not complete 50 percent of your courses and achieve a term GPA of 2.0 or greater during an alert term, you will be prohibited from registering for college credit classes. You may appeal your loss of registration privilege by writing to the Director of Counseling and Career Planning. An appeals committee will inform you of the outcome within 10 working days of the receipt of the appeal.

Please note: There may be higher standards required for students who receive financial aid; are admitted to Medical Assistant, Clinical Lab Assistant, or Nursing programs; are international students; participate in college athletics; or who receive scholarships.

Transcripts

Official transcripts of your coursework at CCC may be ordered in person, by written request or fax through the Registrar's Office. Official transcripts are \$5 each; unofficial transcripts are available by going to the Web at <http://www.clackamas.edu>

For more information call the Transcript Request Line, ext. 2480.

Clackamas Community College reserves the right to withhold issuance of transcripts to students who have not met their obligations to the college.

Graduation

Students are encouraged to petition for graduation at least two terms prior to the term in which they expect to finish. Petitions for graduation may be obtained from the Enrollment Services Center, Advising & Counseling Center, Registrar's Office, or by going to the Web at <http://www.clackamas.edu>

Formal graduation activities are held at the end of Spring term. Students who complete degree or certificate requirements during preceding terms are invited to participate in the Spring term commencement ceremony. Two ceremonies are planned, the first for High School Diploma and GED graduates, and a second for certificate and degree program graduates.

Honors status is granted to students achieving a cumulative GPA of 3.5 on total credits earned at Clackamas. The honors status of Spring term graduates is determined by cumulative GPA through the preceding Winter term.

Multiple Degrees/Certificates of Completion

A student wishing to earn an additional associate degree must complete 24 credit hours of college level coursework that are above and beyond those used to satisfy the previously earned associate degree requirements. Earning additional certificates of completion requires an additional 12 credits of college level coursework that are above and beyond those used to satisfy the previously earned certificate.

Please note that a separate Petition for Graduation must be filed for each individual associate degree and/or certificate of completion that you are attempting to earn.

Multiple degrees/certificates may be earned as follows:

- One AAOT
- One AGS
- One or more AAS with differing program areas
- One or more Certificates of Completion with differing occupational content areas

Personal Rights & Privileges

Your Social Security Number

Providing your Social Security number is voluntary. OAR 581-41-460 authorizes Clackamas Community College to ask you to provide your number. Your Social Security number will be used for keeping records, doing research, aggregate reporting, extending credit and collecting debt. Please read the statement in the *Schedule of Classes* 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.

Student Information

The college collects data on all students.* The kind and amount of data differ for each student depending on the kind of services you use and the length of your stay at the college. Pursuant to Public Law 93-380, you may review all official records, files, or data pertaining to you, with the following exceptions:

- Confidential financial information reported by the parent or guardian unless the records explicitly grant by written permission the student to review the financial statement.
- Medical, psychiatric, or similar records used for treatment purposes.

Access to your record is guaranteed and must be made available to you within 45 days of your official request. You may challenge the content of a record you consider inaccurate, misleading, or otherwise in violation of your privacy or other rights. If the challenge is not resolved with the custodian of records, you have the right to a hearing as outlined in the "Students' Rights, Freedoms & Responsibilities" section of the *Student Handbook*.

**All data from records submitted, filed and accumulated in the Registrar's Office become the property of the College.*

Release of Information

Clackamas Community College adheres to and is committed to honoring all state and federal laws pertaining to the privacy and confidentiality of your directory information and academic record. You have the right to restrict access to information if you so choose. Please refer to the following in regards to the release and restriction of directory information.

Continued

Family Educational Rights & Privacy Act (FERPA)

The Family Educational Rights and Privacy Act (FERPA) provides students with specific rights regarding their academic records. They are as follows:

- The right to inspect and review your records. You may request to review your records by submitting a written request to the Registrar's Office or other school official having custody of such records.
- The right to seek amendment to your record if you believe it to be inaccurate, misleading or in violation of your privacy rights. Requests for amendments must be in writing and must describe the specific item or record you wish to have amended. You must also include the reasons why the amendment is justified.
- The right to consent to disclosure of personally identifiable information contained in your academic records, except when consent is not required by FERPA. FERPA does not require a student's consent when disclosure is to school officials with legitimate educational interests (See AR 6-96-0031). Additionally, consent is not required by FERPA in the instances where a person or company with whom the college has contracted or appointed as its agent and/or students serving on official committees have legitimate educational interest. A school official has a legitimate educational interest if the official needs to review an academic record in order to fulfill his/her professional responsibilities.
- The right to file a complaint with the Department of Education, Family Compliance Office concerning alleged failures by the college to comply with the FERPA requirements.
- FERPA allows colleges to disclose your directory information without consent. If you do not want this information released, you must submit a request with the Registrar's Office.

Directory Information

Clackamas Community College has established an institutional policy regarding the release of limited directory information as defined in the Family Educational Rights and Privacy Act (FERPA). The following information will be released upon request to anyone:

1. Enrollment status
2. Verification of certificate or degree award
3. Residency status
4. Major
5. Athletic participation – height and weight of team members
6. The following information may be released by the Dean of Instructional Services or Registrar:

- a. Student name, address, telephone number
- b. Class location to Public Safety in case of health or safety emergencies.

Exceptions to the above may include but are not limited to:

1. Release of alumni names and addresses to our Foundation Office for communication with CCC graduates;
2. The release and posting of names of students receiving academic honors/awards;
3. Student athletes may sign a release of information form through the Athletic Department for the release of information regarding registration activity, grades and access to records by their coach or the athletic director.

Students employed with the college that have access to student records receive FERPA training and are asked to read and sign an institutional confidentiality statement of understanding. Directory information for use within the college is permitted in accordance with FERPA guidelines. Disclosure within the college does not constitute institutional authorization to transmit, share or disclose any or all information received to a third party.

Requesting to Restrict the Release of Directory Information

You may restrict the release of directory information as mentioned above by submitting a Student Directory Restriction request form with the Registrar's Office. This restriction will remain in place until you ask for removal. It will remain in place even after you graduate or have stopped attending.

Solomon Amendment Disclosure

The Solomon Amendment requires by law that the college release: student name, address, telephone number, date of birth, educational level, academic major and degrees awarded upon request from recruiters of the branches of the U.S. military. If you request that this information not be released, CCC will not release to military recruiters or other parties except as noted in this publication or upon written permission from you.

Student ID Cards

Photo student ID cards are available at the Enrollment Services Center in Roger Rook Hall. You'll need this card for transactions on campus, including library checkout, access to computer and tutorial labs, the Assessment Center, enrollment verification, and admission to college events. Picture identification will be required to obtain your photo ID card.

Smart.

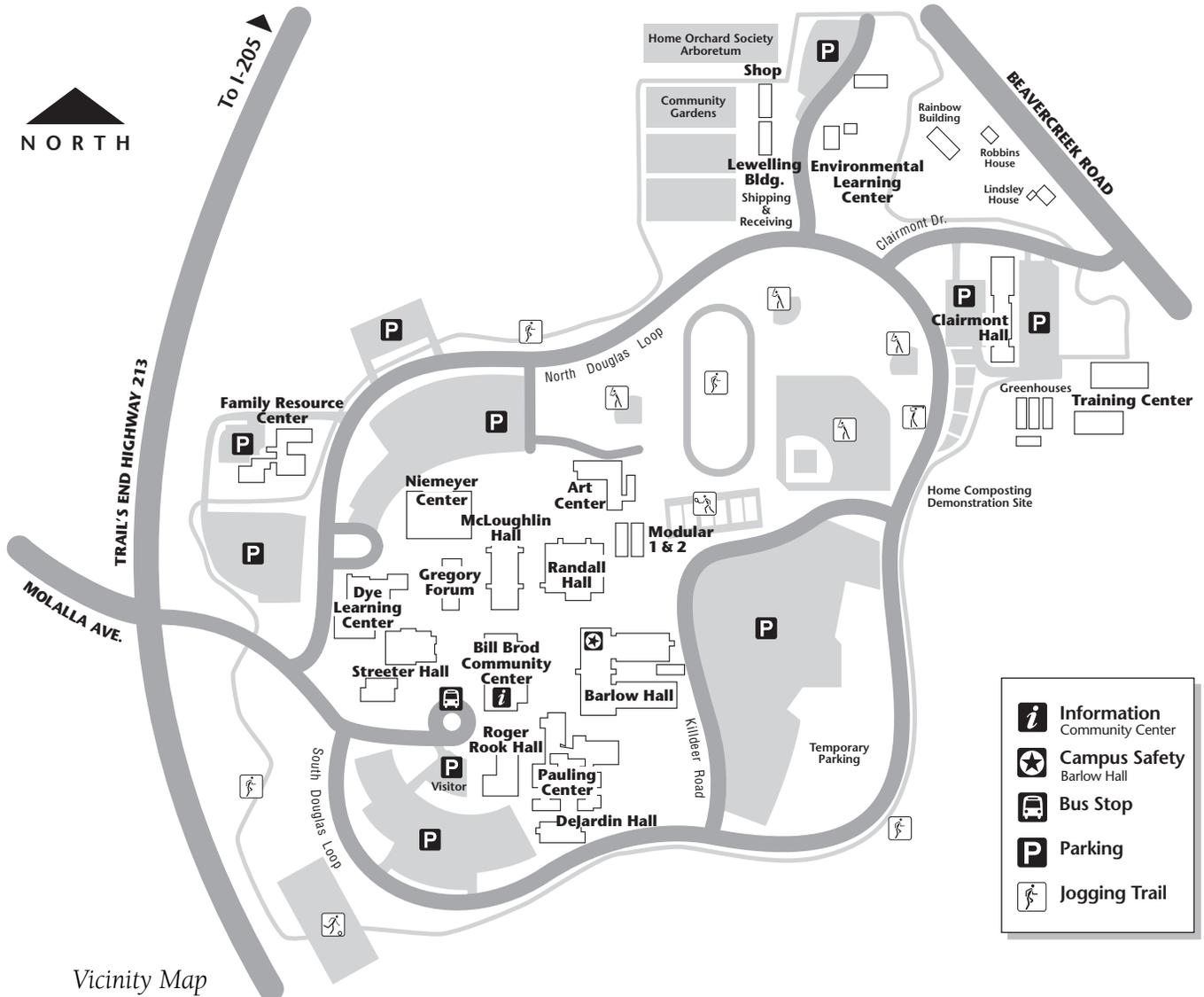
Maps, Services, Activities, Special Programs

Maps

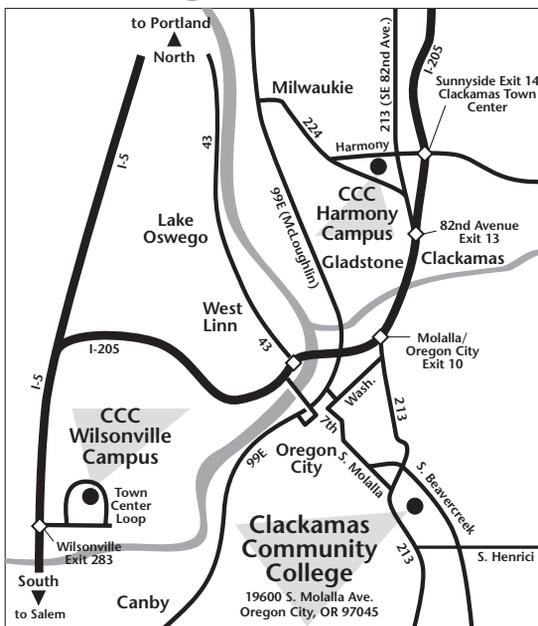
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INSTRUCTIONAL DEPARTMENT	BUILDING	INSTRUCTIONAL DEPARTMENT	BUILDING
<i>Apprenticeship/Building Construction</i>	Training Center A	<i>Foreign Language</i>	Barlow Hall, 2nd floor
<i>Art</i>	Art Center	<i>Health Sciences</i>	DeJardin Hall, 2nd Floor
<i>Automotive</i>	Barlow Hall, 2nd floor	<i>Horticulture</i>	Clairmont Hall
<i>Business</i>	McLoughlin Hall, 2nd floor	<i>Manufacturing</i>	Barlow Hall, 2nd floor
<i>Communication/Theatre Arts</i>	Niemeyer Center	<i>Mathematics</i>	Streeter Hall
<i>Computer Science</i>	Streeter Hall	<i>Music</i>	Niemeyer Center
<i>Community Education</i>	Harmony Campus*	<i>Occupational Skills Training</i>	Community Center
<i>Cooperative Work Experience</i>	Community Center	<i>Physical Education/Health</i>	Randall Hall, ground floor
<i>Criminal Justice</i>	Clairmont Hall	<i>Science</i>	Pauling Center
<i>Drafting</i>	Barlow Hall, 2nd floor	<i>Skills Development</i>	Dye Learning Resource Center
<i>Education & Human Services</i>	Family Resource Center	<i>Small Business Center</i>	Harmony Campus*
<i>Employment Skills Training</i>	Community Center	<i>Social Science</i>	McLoughlin Hall, 2nd floor
<i>Engineering/Water Quality</i>	Pauling Center	<i>Welding</i>	Training Center B
<i>English</i>	Streeter Hall		
<i>English as a Second Language</i>	Dye Learning Resource Center		

* See vicinity map, next page .



Vicinity Map



Clackamas Community College Campus Map

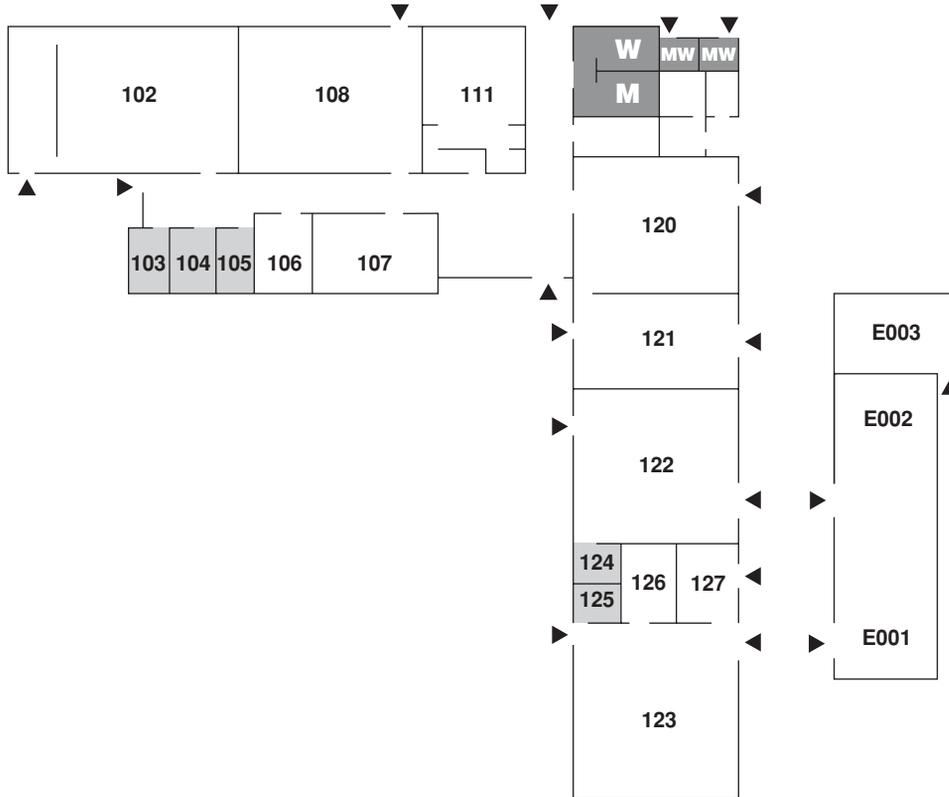
Clackamas Community College
19600 South Molalla Avenue
Oregon City, OR 97045-7998

CCC Harmony Campus
7616 S.E. Harmony Road
Milwaukie, OR 97222

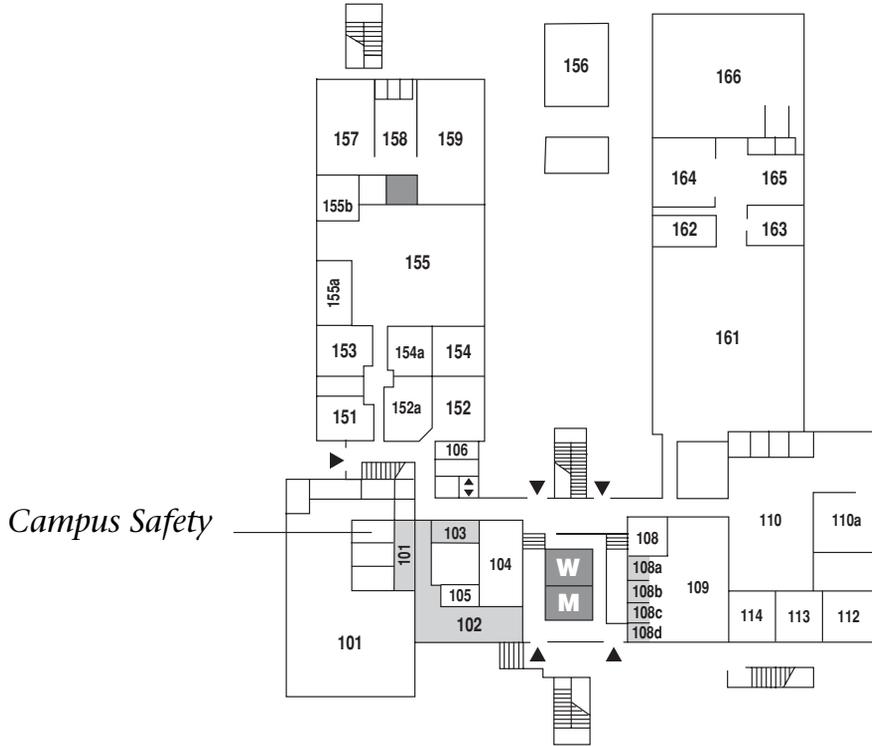
CCC Wilsonville Campus
29353 Town Center Loop E
Wilsonville, OR 97070

To reach any college office, call 503-657-6958 and dial the extension you want. (Hearing-impaired TTY/TDD 503-650-6649)

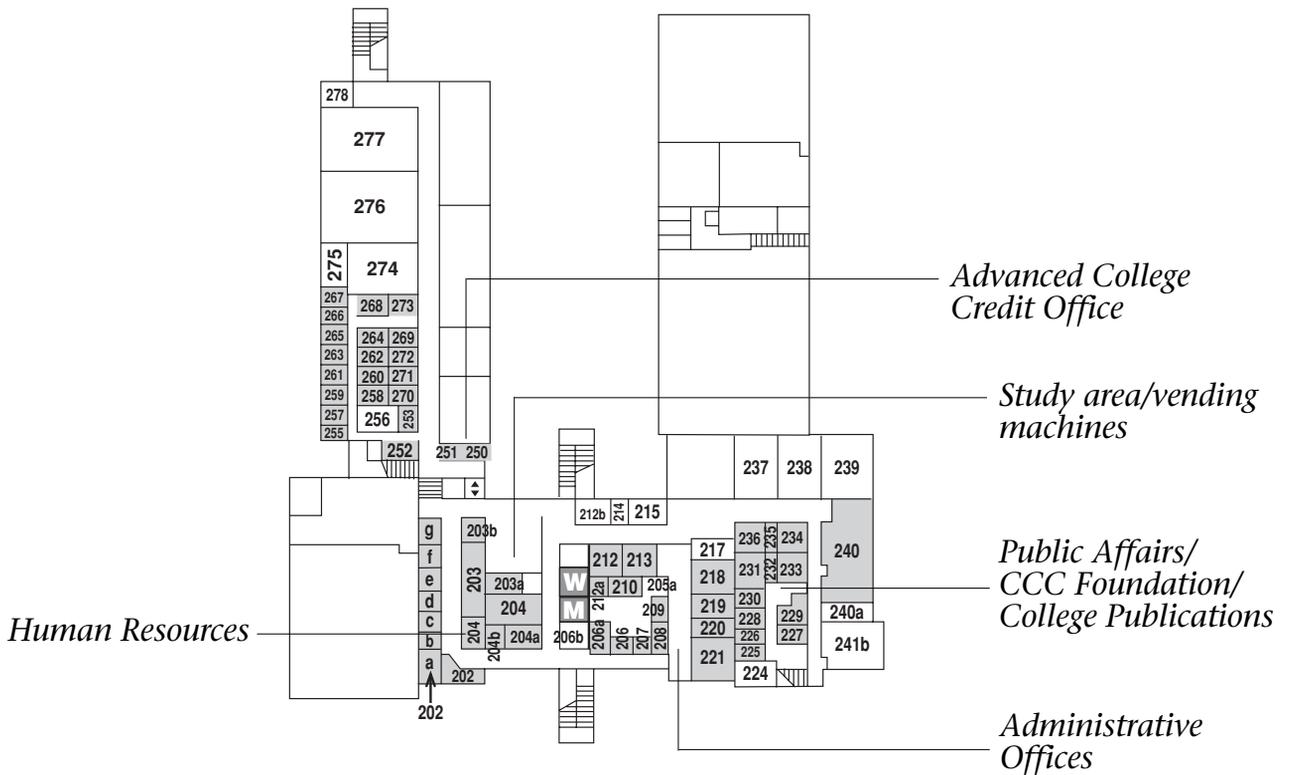
Art Center



Barlow Hall (1st floor)

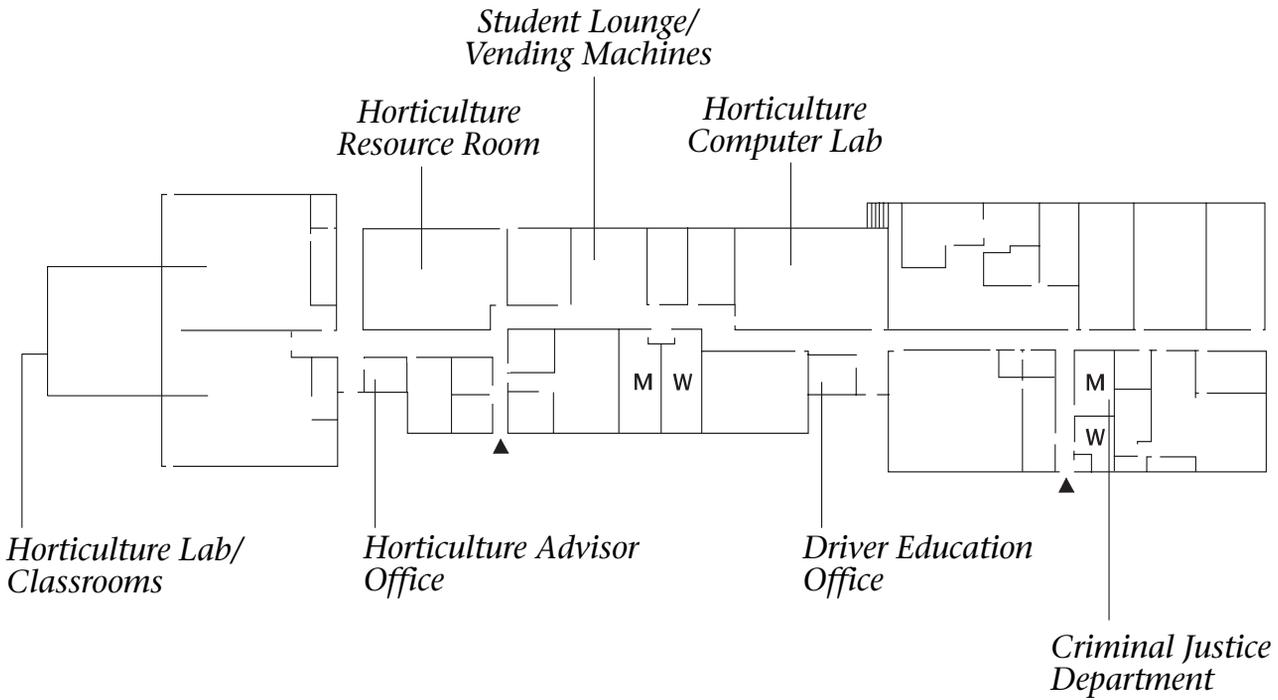


Barlow Hall (2nd floor)

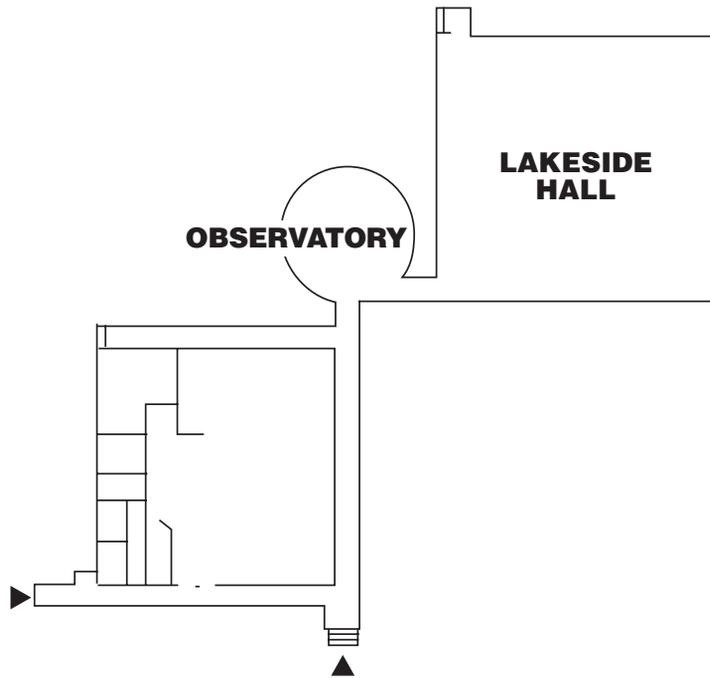


To reach any college office, call 503-657-6958 and dial the extension you want. (Hearing-impaired TTY/TDD 503-650-6649)

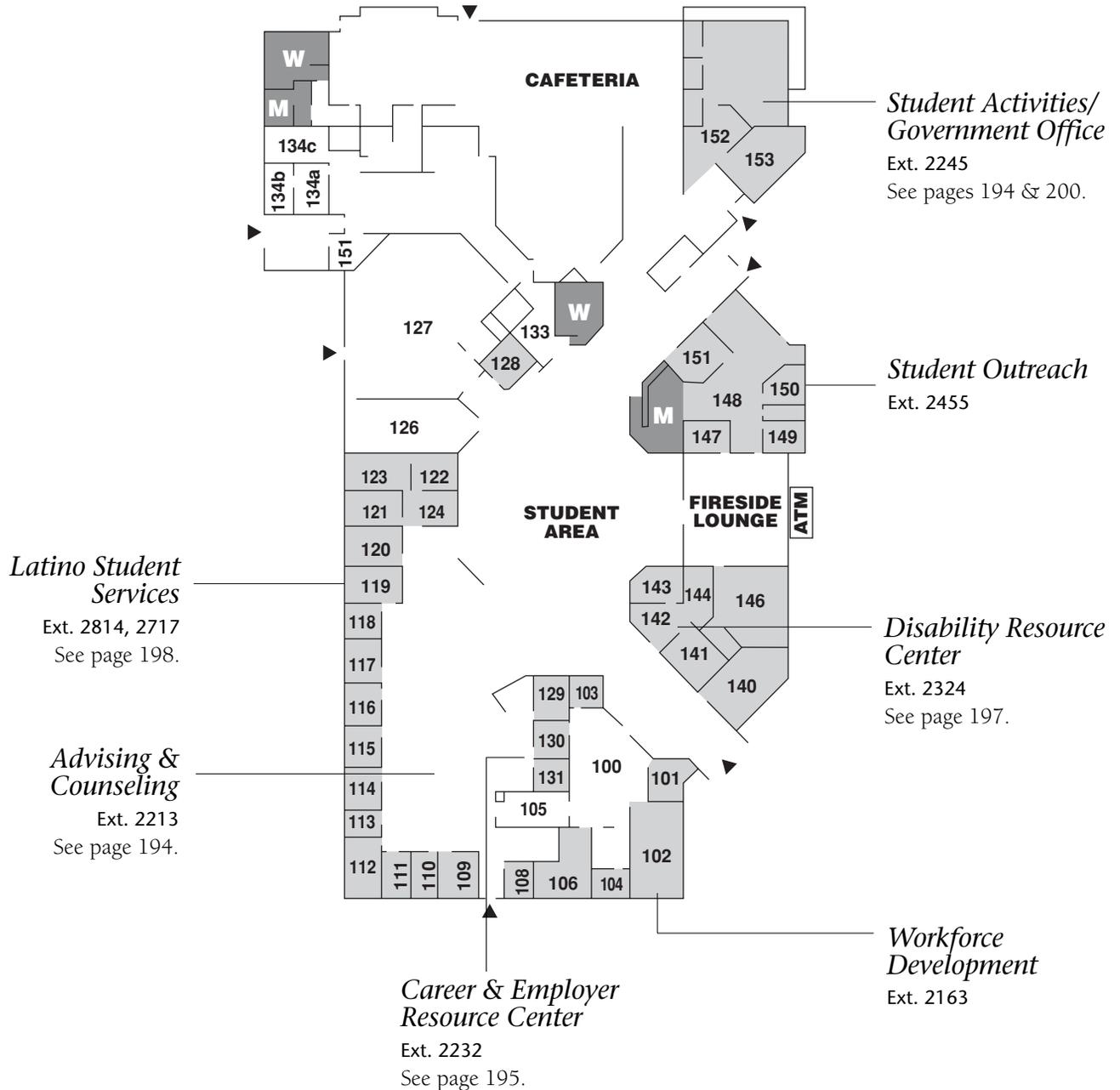
Clairmont Hall



John Inskeep Environmental Learning Center

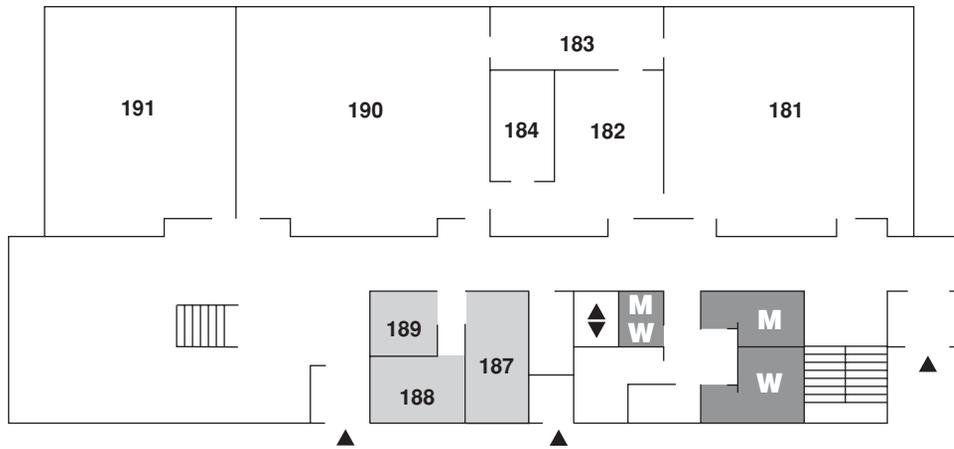


Bill Brod Community Center



Summer hours:
 No Friday or Saturday
 hours during the day.
 Call individual departments
 for evening hours.

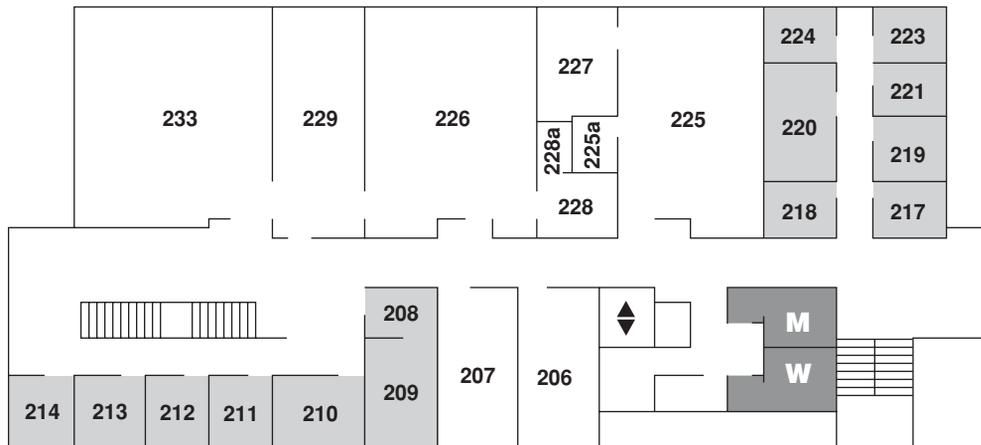
DeJardin Hall (1st floor)



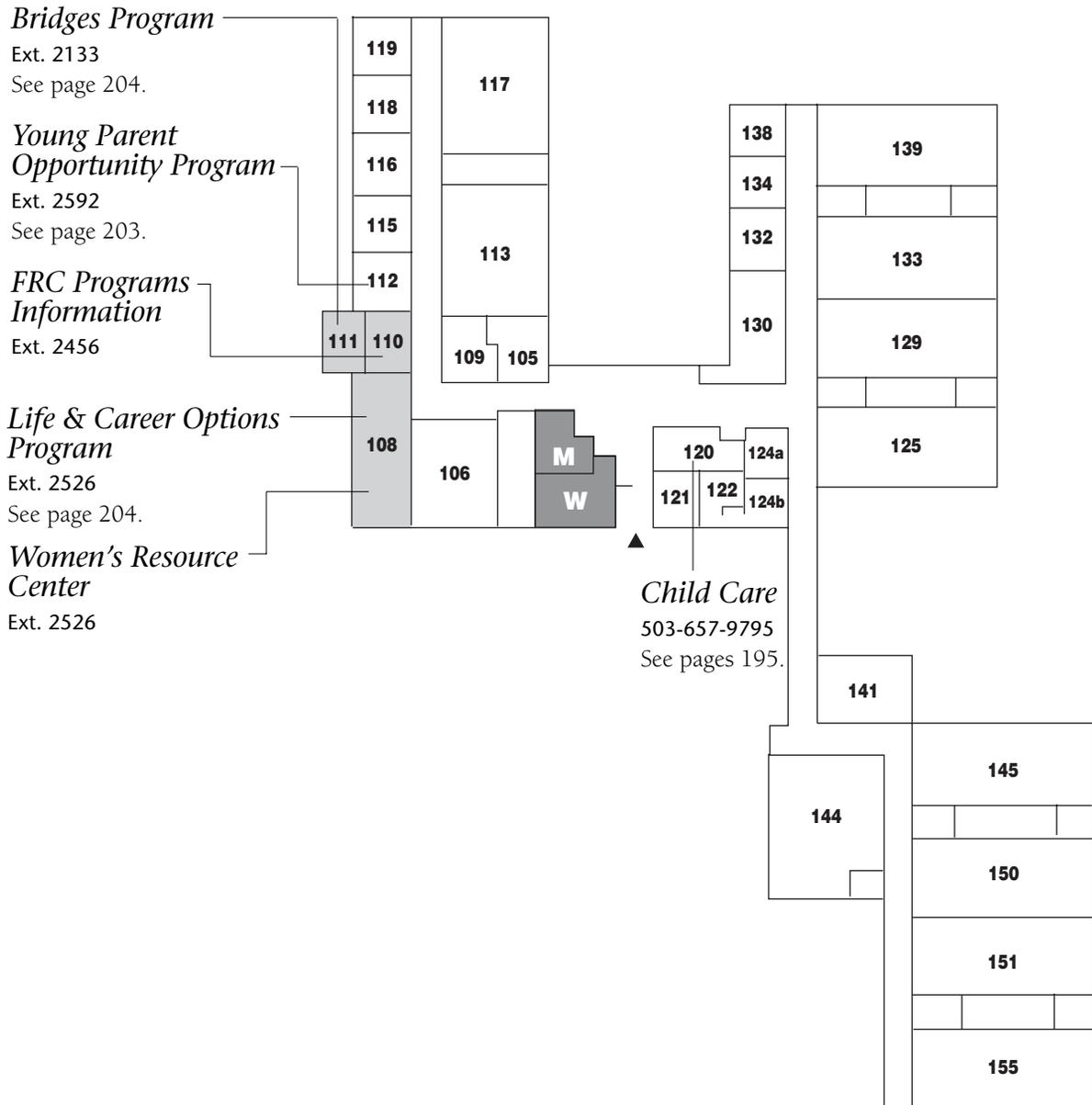
Health Sciences

Ext. 2428

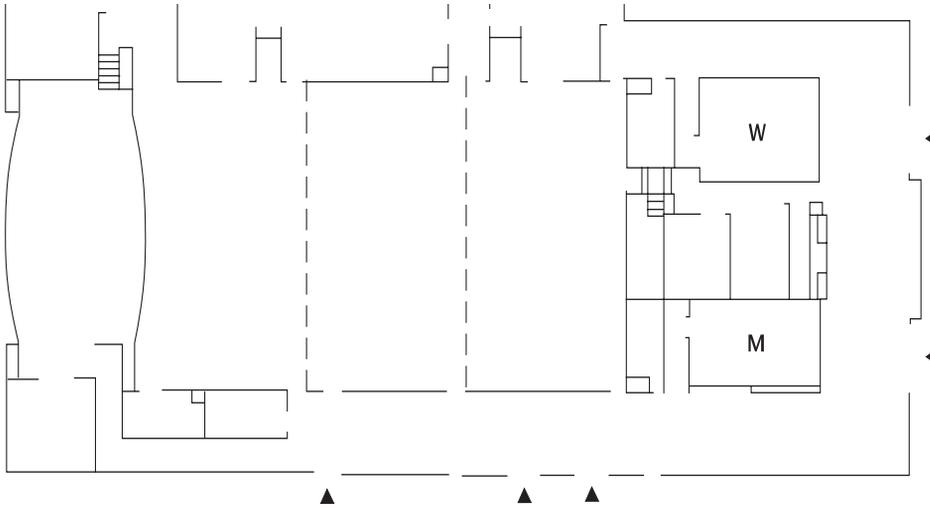
DeJardin Hall (2nd floor)



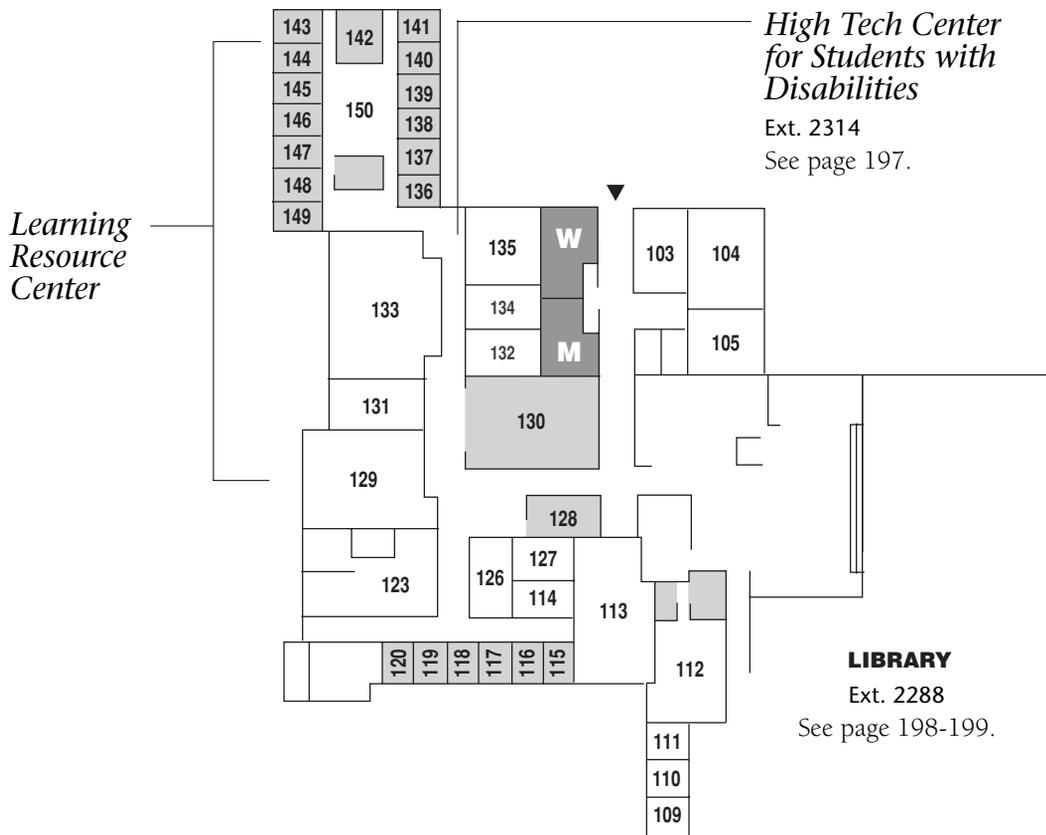
Elizabeth McClung Brod Family Resource Center



Gregory Forum

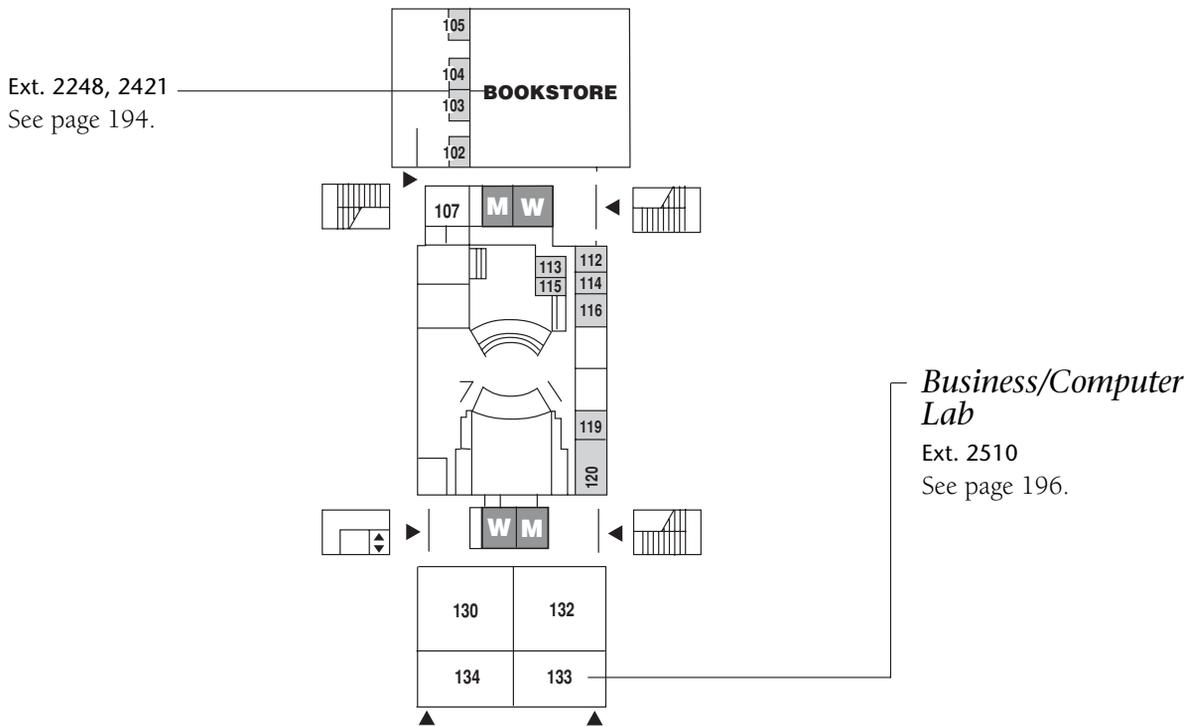


Eva Emery Dye Learning Resource Center

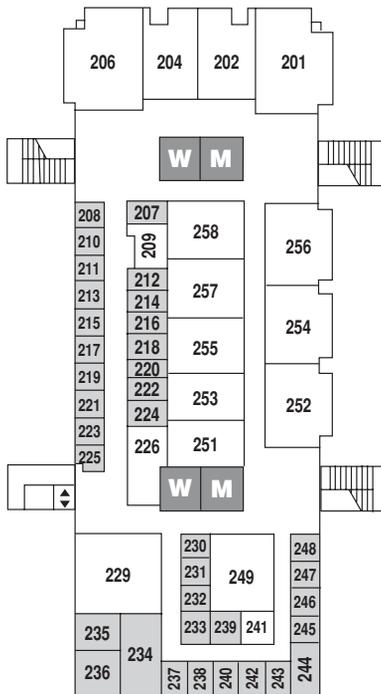


restroom
 staff office
 classroom
 building entrance
 elevator

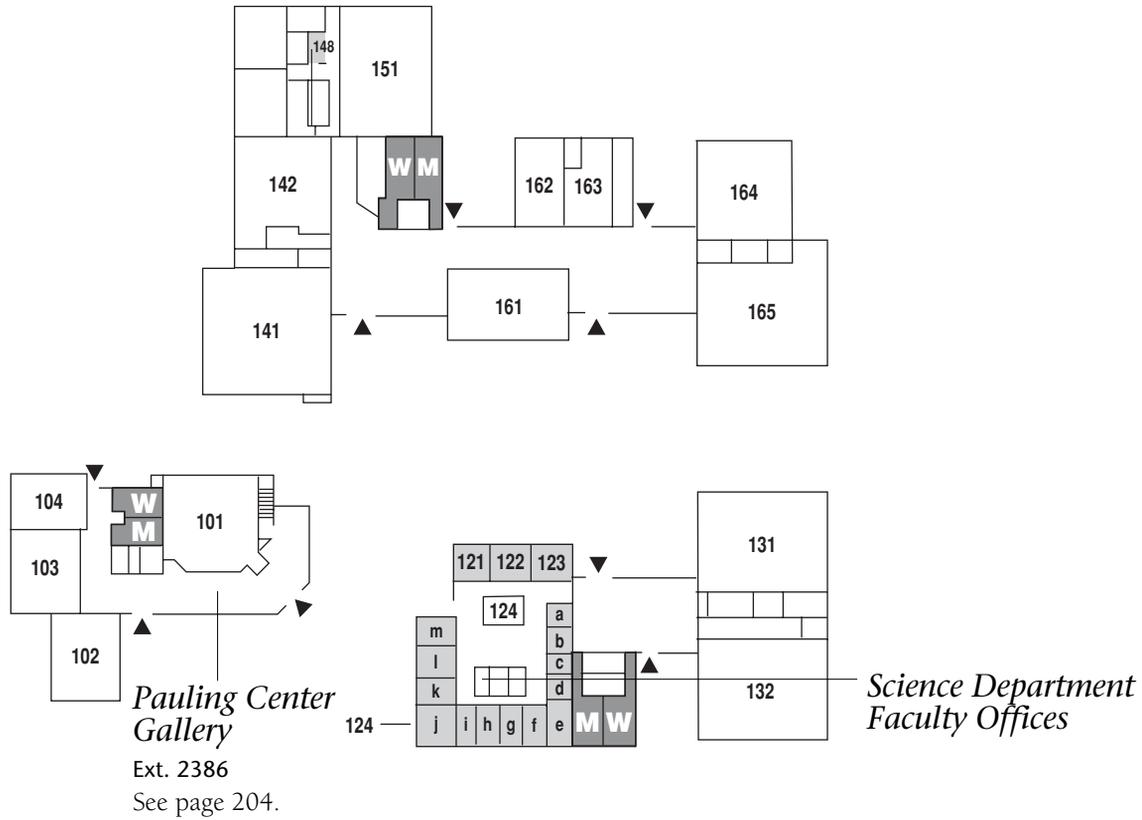
McLoughlin Hall (1st floor)



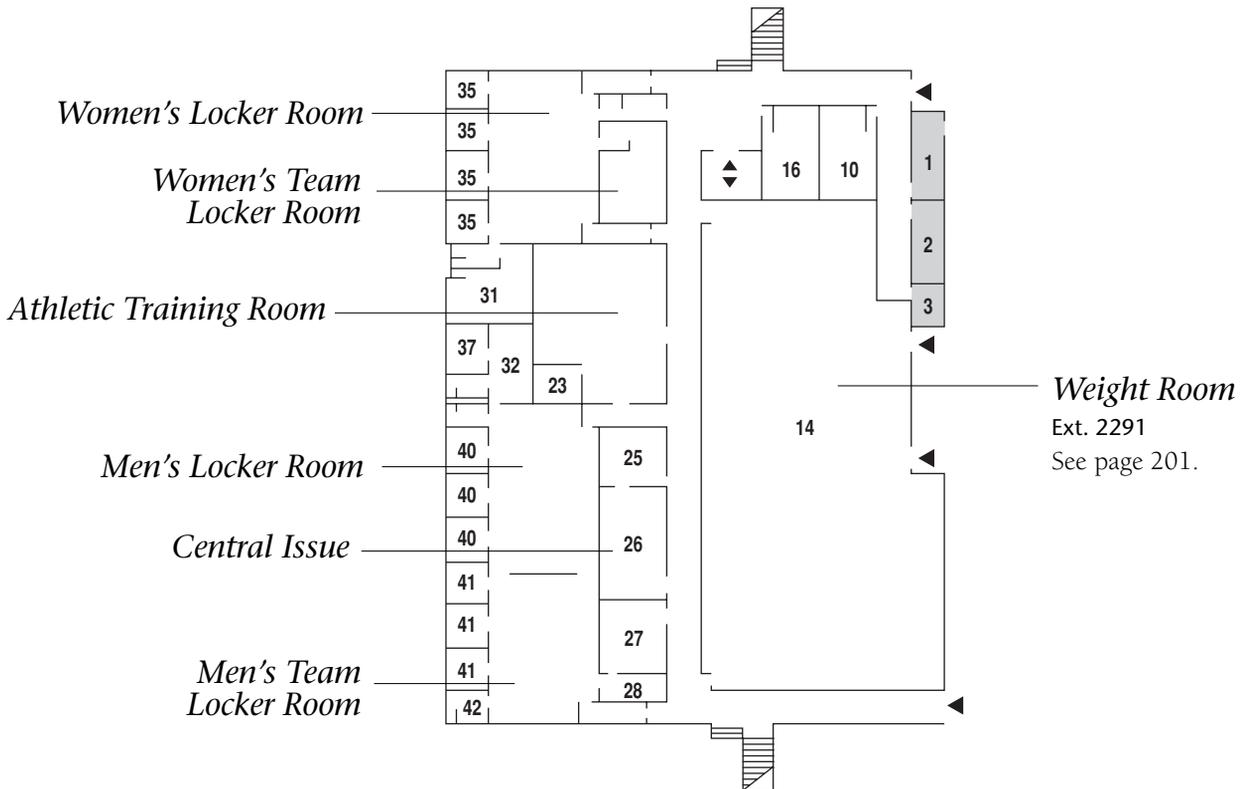
McLoughlin Hall (2nd floor)



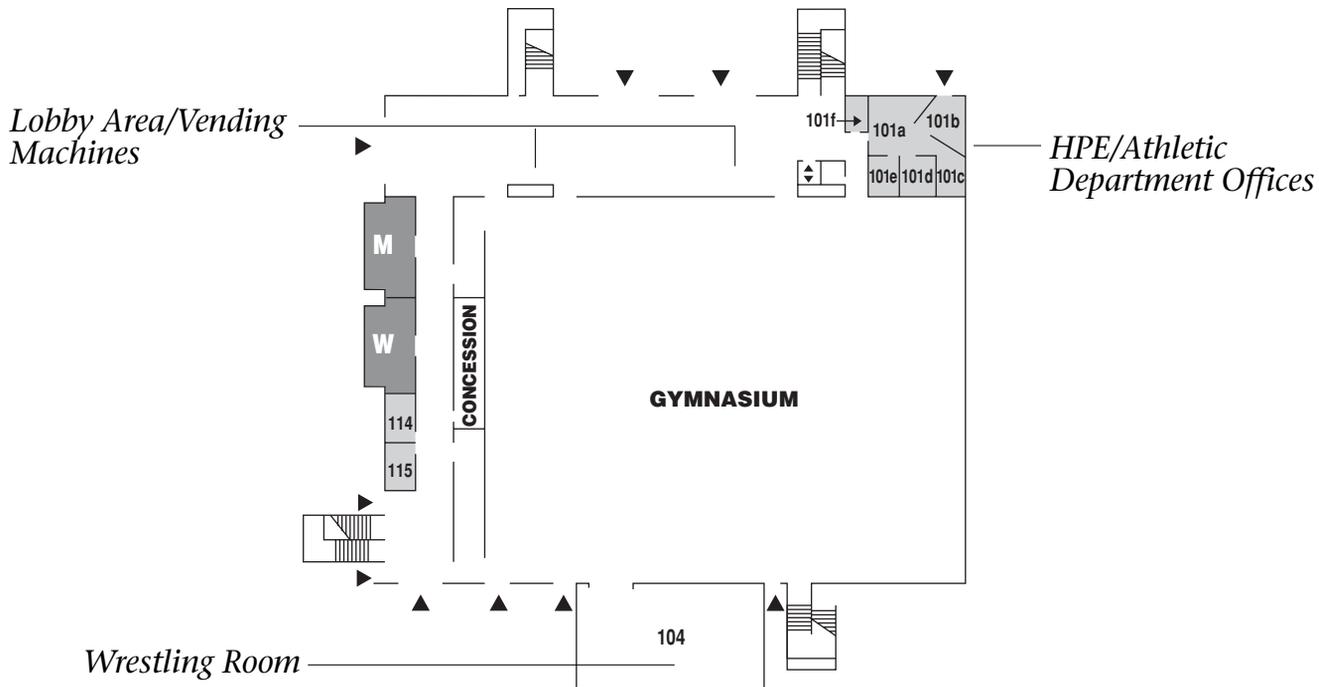
Pauling Center



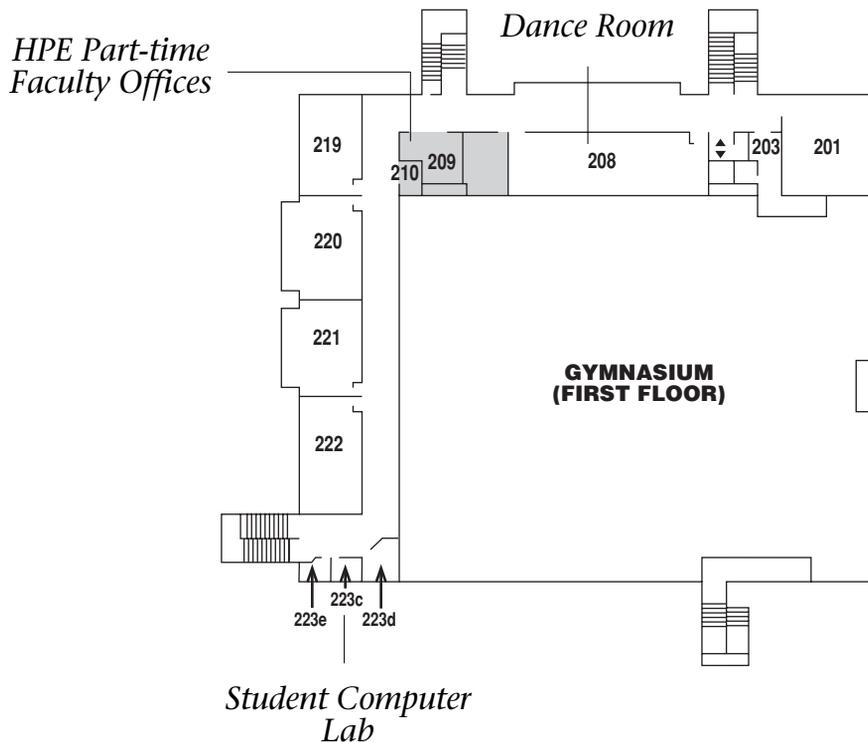
Randall Hall (ground floor)



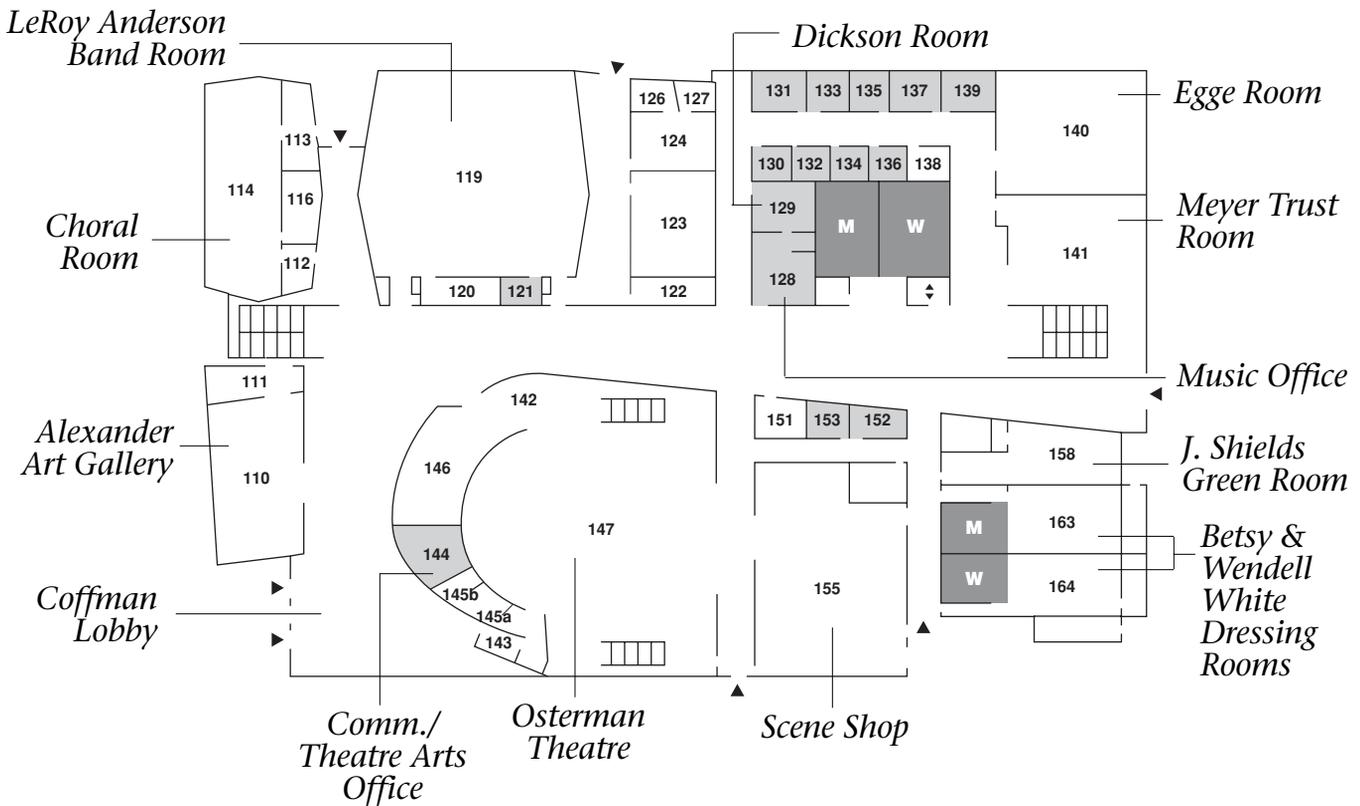
Randall Hall (1st floor)



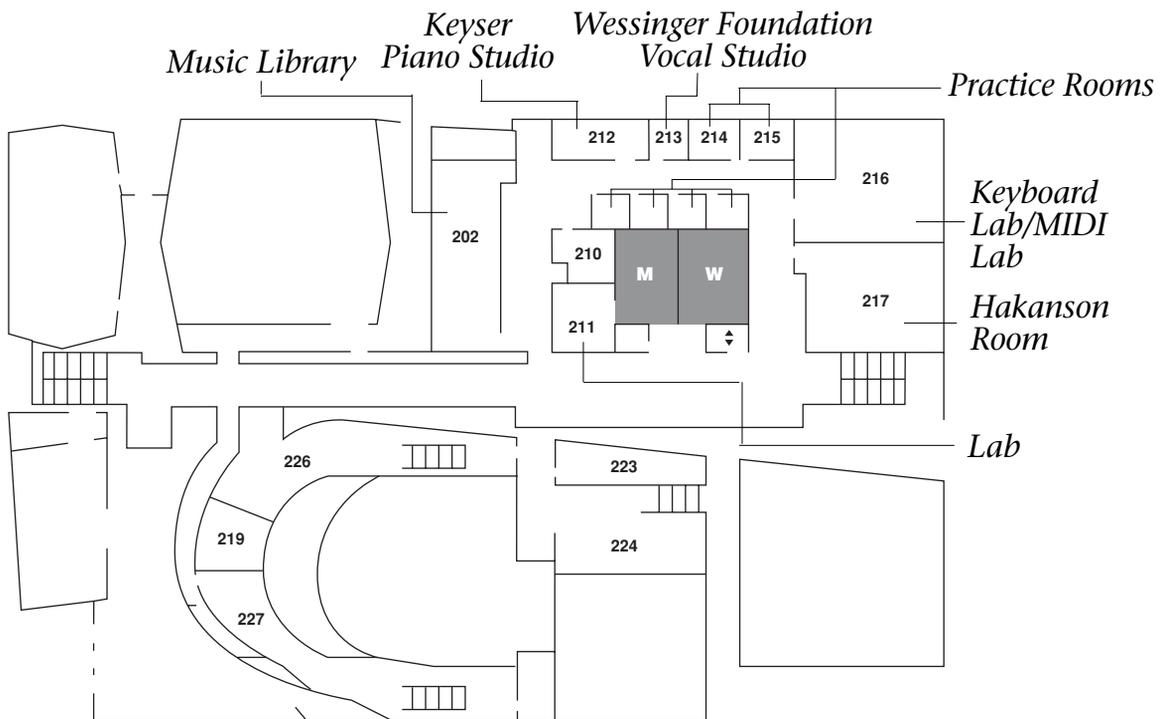
Randall Hall (2nd floor)



Niemeyer Center (1st floor)

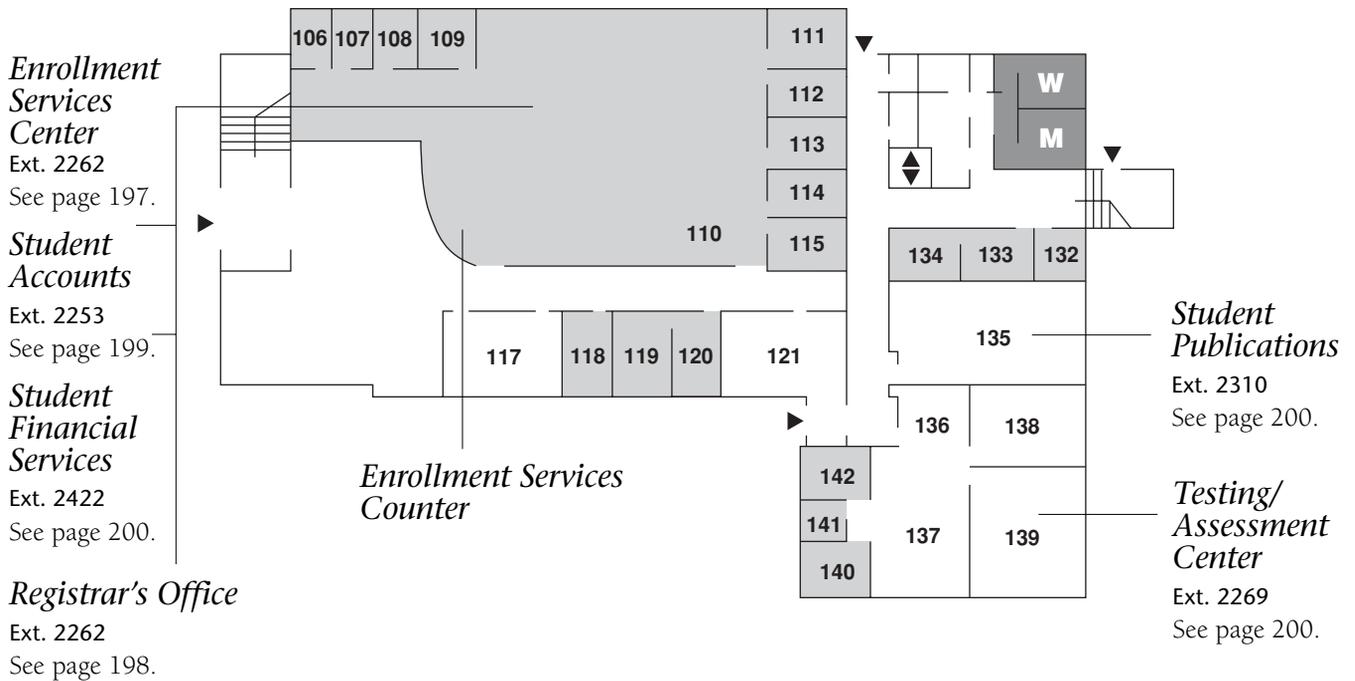


Niemeyer Center (2nd floor)

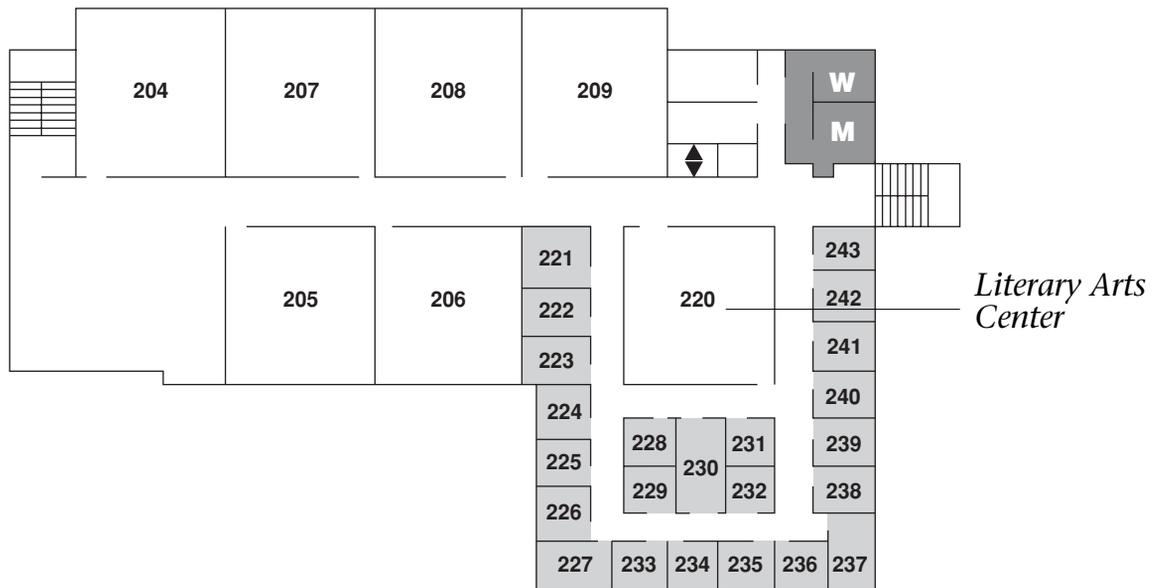


restroom
 staff office
 classroom
 building entrance
 elevator

Roger Rook Hall (1st floor)



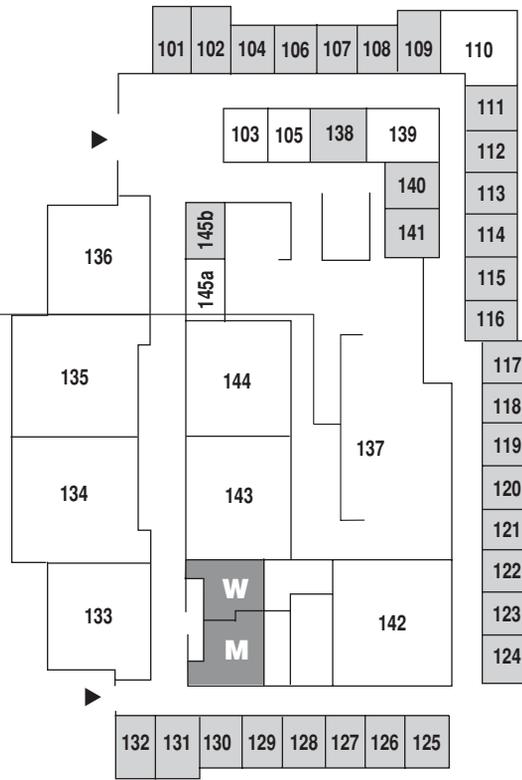
Roger Rook Hall (2nd floor)



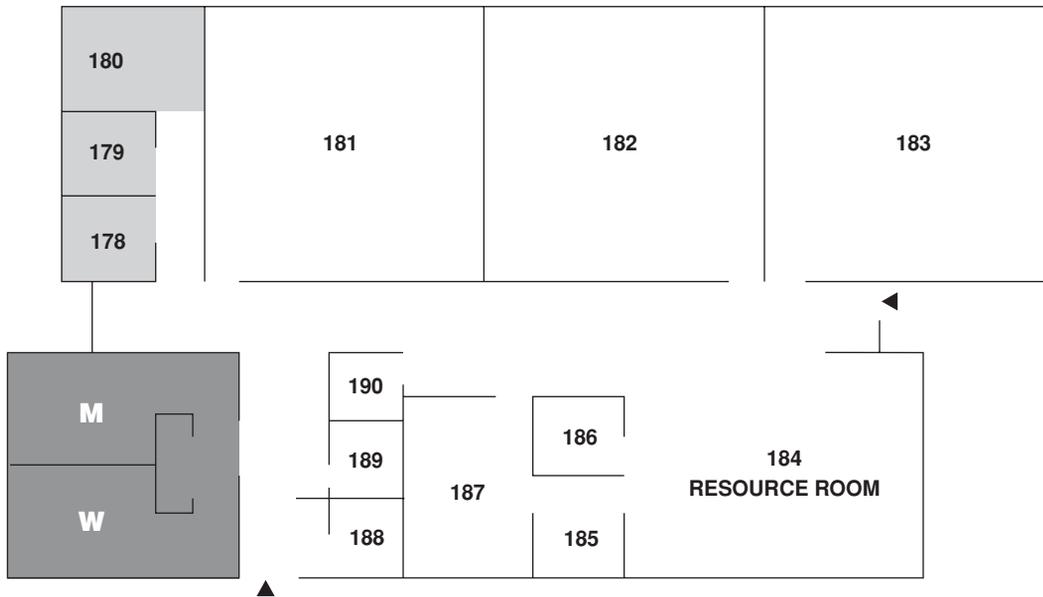
Streeter Hall

Math/Computer Lab

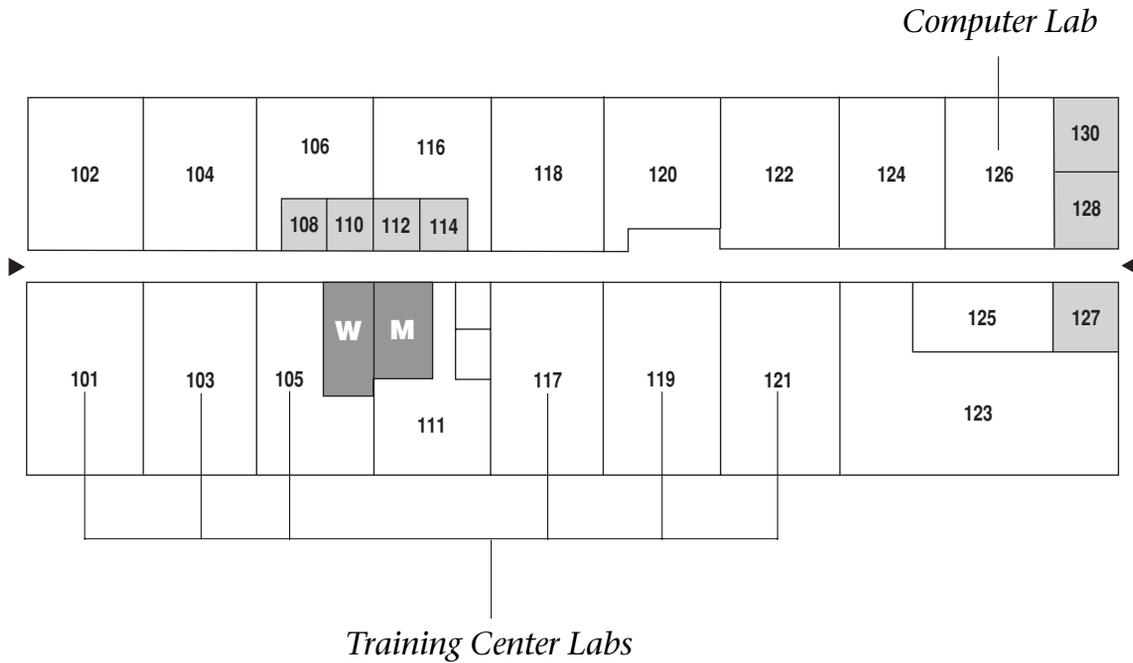
Ext. 2308
See page 196.



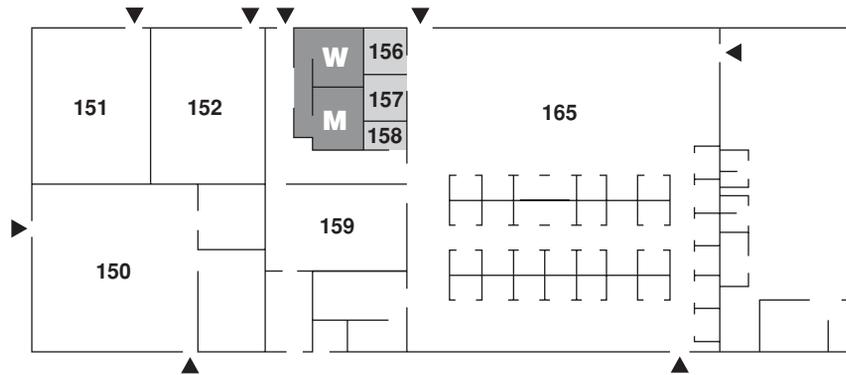
Streeter Hall Annex



Training Center A

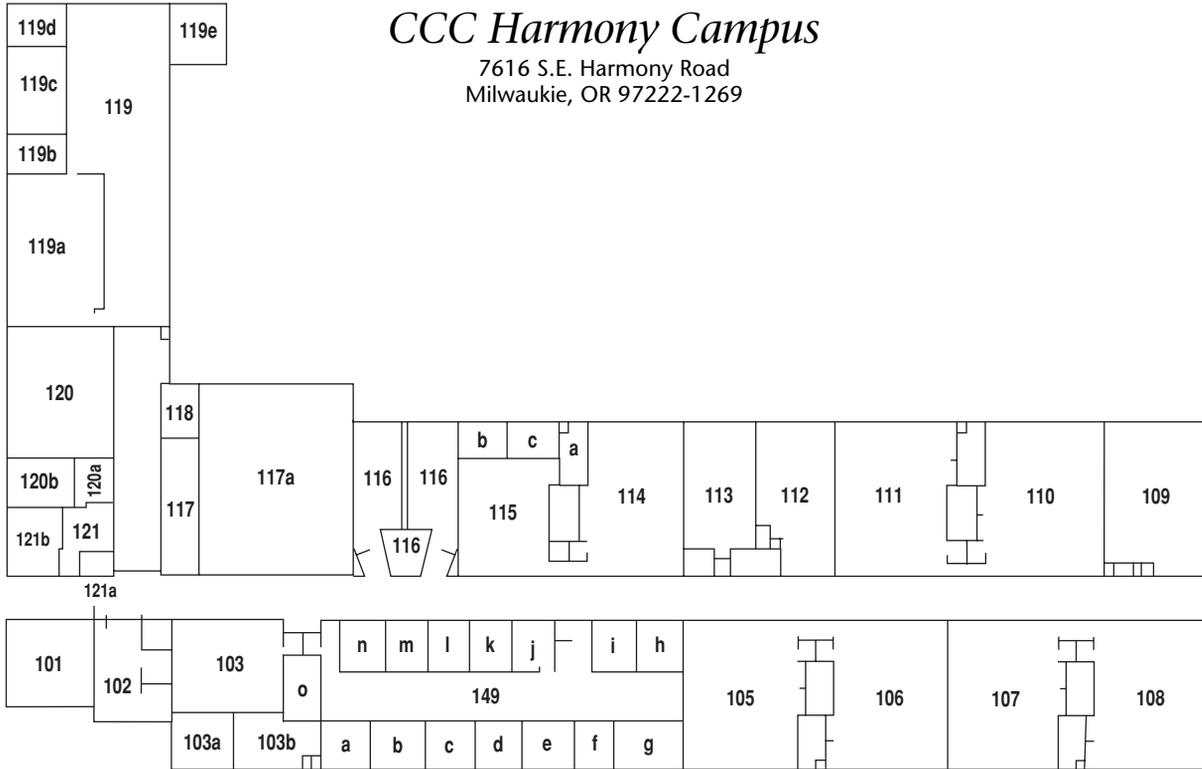


Training Center B



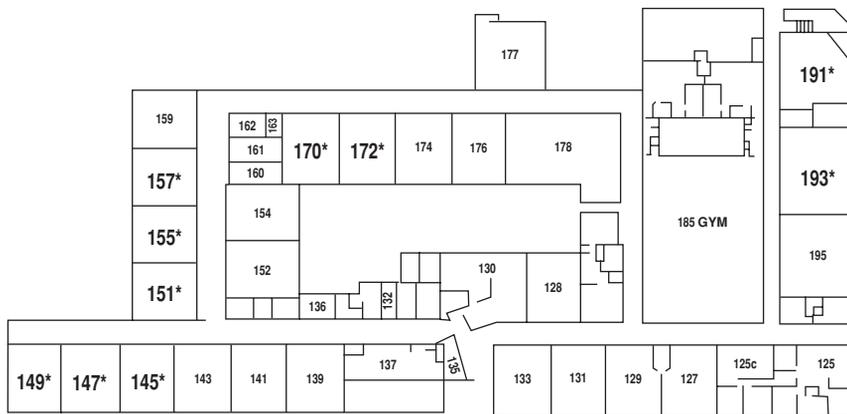
CCC Harmony Campus

7616 S.E. Harmony Road
Milwaukie, OR 97222-1269



OIT Portland East (Metro Center)

7736 S.E. Harmony Road
Milwaukie, OR 97222-1269

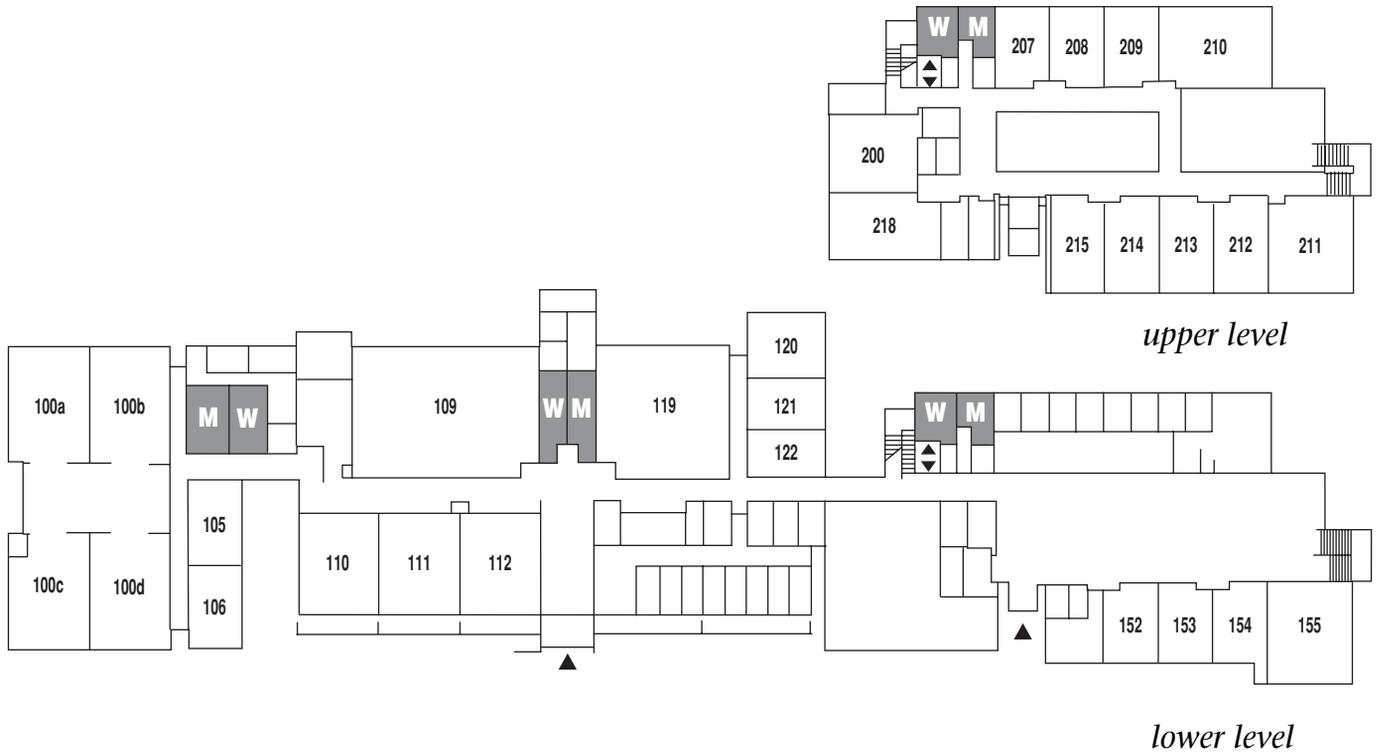


Note: Rooms marked with an * are used for CCC classes.

restroom
 staff office
 classroom
 building entrance
 elevator

CCC Wilsonville Campus

29353 Town Center Loop E
Wilsonville, OR 97070



Services & Activities

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Student Accounts 199	
Student Activities Office 200	
Student Financial Services 200	
Student Publications 200	
Testing/Assessment 200	
Theatre 200	
Tutorial Services 201	
Weight Room 201	

Student Services & Activities

Academic Advisors

BILL BROD COMMUNITY CENTER

Ext. 2213

Academic Advisors are available on a drop-in basis to help students by providing a wide range of academic information and assisting students with many academic processes including course selection, degree requirements, educational planning, and transfer information.

Advising & Counseling Center

COMMUNITY CENTER

Ext. 2213

The Advising & Counseling Center provides many services to assist students. Residing in the Advising & Counseling Center are:

- Academic Advisors
- Latino Services
- Tutorial Services
- Disabled Student Services
- Home School Option Program
- International Students Program
- College Counselors

Associated Student Government

COMMUNITY CENTER

Ext. 2636

The Associated Student Government (ASG) of Clackamas Community College is the governing body of CCC students. The president and vice president are elected by the student body; senators and other officers are determined by a selection process. ASG operates under a constitution designed to promote student activities which stimulate social, physical, moral, and intellectual life on campus.

Athletics

RANDALL HALL

Ext. 2291

Intercollegiate

Clackamas is a member of the Northwest Athletic Association of Community Colleges (NWAACC) and competes in intercollegiate sports with other colleges throughout the Northwest. Intercollegiate athletics for men include cross-country, track, wrestling, basketball, and baseball. Women's intercollegiate sports include basketball, softball, volleyball, track, cross country, and soccer.

Intramural

In addition to a comprehensive physical education program, Clackamas offers opportunities for students to participate in a variety of intramural sports activities, including tennis, racquetball, fun runs, softball, volleyball, basketball, flag football, and badminton (Not all activities are offered each year.)

Bookstore

MCLOUGHLIN HALL

Ext. 2248

The Bookstore is the place to shop for almost everything a student needs for college. Items in stock include new and used textbooks, study aides, calculators, computer accessories and software, art, drafting and office supplies, sundries, stamps, school supplies, greeting cards, general books, CCC clothing, snacks, candy, cold drinks, ice cream and Tri-Met bus passes. The Bookstore offers a special order service for many items not normally stocked.

The Bookstore offers textbooks online at www.ccbbooks.com

Limited bookstore services are offered at CCC Harmony Campus during the first two weeks of fall, winter and spring terms. The main campus bookstore is open extended hours during the first two weeks of Fall, Winter and Spring terms.

While textbook buyback is open year round, students are encouraged to sell their books at term ending when prices are usually better.

Personal checks are accepted. A government issued picture ID **and** CCC Student ID number are required to write a check at the Bookstore. The bookstore also accepts Visa, Mastercard and Discover.

Campus Tours

COMMUNITY CENTER

Ext. 2481

CCC tours are provided for prospective students and community members to view campus life. Student Ambassador tour guides are available by appointment. Call to schedule an individual or group tour, or sign up online at <http://www.clackamas.edu/contact/tour.asp>

Career Information

COMMUNITY CENTER

Career and Employer Resource Center

Ext. 2409/2232

Advising and Counseling Center

Ext. 2213

Career, employment, and training information and services are provided to students and potential students. Information and Services include:

- Career Exploration Resources
- Career Assessment Tools
- Job Search Information and Planning
- Résumé, Cover Letter, Application and Interviewing Assistance
- Individualized Training Arranged with Local Employers
- Employment Listings
- Career Workshops and Classes
- Job Search Workshops and Classes
- Career Counseling

Many of these resources are available online. Career Exploration courses are available both on campus and online through the Counseling Department and the Life and Career Options program. Cooperative Work Experience also offers an opportunity for students to earn credits while having workplace experiences that enhance their knowledge and employability.

Child Care

FAMILY RESOURCE CENTER

503-657-9795

The Child Care Center is available for students, employees and community families. The center, managed by the YMCA of Columbia-Willamette, is open year-round, Monday through Friday. Care is available for children ages six weeks through six years for a monthly fee. During the summer, care is also available for six- to 12-year-olds. The center is supervised by specialists trained in the social and developmental needs of young children and accredited by the National Association for the Education of Young Children.

Short term care is available for students in two or three hour time blocks, two to three times a week, for children 30 months and older. Fee is per term.

Preregistration is required. Scholarships are available on a limited basis. For referral to local family day care homes, call 503-253-5000.

Clubs

COMMUNITY CENTER

Ext. 2245

Some of the clubs active on campus include Associated Landscape Contractors of America, Baptist Student Ministries, Black Student Union, Cat Club, Chrysalis, Computer, Deutschen Veren (German), Fellowship of Christian Athletes, Rainbow, Horticulture, International, Latter Day Saints Student Association (LDSSA), Pacific Northwest Clean Water Association Students, Phi Theta Kappa, Spanish, Speech, Unidos, and Writers. New interest groups are free to organize under the student constitution and the regulations of the college.

College Counselors

COMMUNITY CENTER

Ext. 2213

College counselors are available on a walk in basis or by appointment and can help with a wide array of personal and academic and/or professional concerns. These include academic, personal and/or relationship issues, drug or alcohol issues, job and career counseling, as well as dealing with any issues or concerns with college staff or policies.

Computer Labs

OREGON CITY CAMPUS

The college has computers available for student use, with lab assistance, in several major lab areas. The Streeter Hall lab is the only general access lab open to all students.

Many academic departments manage their own computer labs. Specialized software for these programs is usually available in these labs only. Check with specific departments to see if they provide lab hours for their students.

Streeter Hall Academic Computing Lab

STREETER HALL

Ext. 2308

Computers in the Streeter Lab are available to any Clackamas student upon presentation of a current CCC student ID card. Students who are not computer literate need to enroll in a computer literacy class before using the lab. Students can take advantage of Windows-based computers, word processing and spreadsheet programs, and lab tutors. Computers in the Streeter lab have e-mail capability and Internet access. Other network access such as Telnet, FTP, and World Wide Web is also available.

Business Computer Lab

MCLOUGHLIN HALL, M133

Ext. 2510

The Business Lab is available for business students taking classes that use computer software and/or various business machines such as ten key, typewriters, and transcription. Instructor assistants are available days and evenings.

The lab is closed weekends, summers, and whenever the college is closed. The schedule of open times is posted on the lab door.

Drafting Technology Lab

BARLOW HALL, B274, B276 & B277

Ext. 2379

Open lab schedules are posted outside each lab.

The Drafting Technology labs are available for current CAD, CDT or GIS students only. Lab assistants are available.

Music Technology and Audio Recording Labs

NIEMEYER CENTER, N216

Ext. 2434

The Music MIDI and Audio Recording Labs enable students to compose, record, print, and produce music. These Labs are available to CCC students enrolled in Music classes which use related Music Technology hardware and software. The CCC MIDI lab houses 20 state-of-the-art MIDI work stations. The Audio Recording Lab features both analog and digital recording formats.

Software includes Finale, Digital Performer, Pro Tools, Reason, CUBASE, Vision, Music Shop, Practica Musica, and Band in a Box.

Cooperative Work Experience

COMMUNITY CENTER, CC129

Ext. 2232/2273

The Cooperative Work Experience (Co-op) program offers students the opportunity to earn college credit by working in a job directly related to their program of study. Co-op offers expanded learning experiences through exposure to actual work situations, organizational relationships, equipment, and techniques that cannot be duplicated in the classroom.

CCC's Co-op program creates a vital bridge between college studies and workplace success.

Student Benefits

- Improved job skills
- Increased professional confidence
- Valuable employer contacts
- College credit for on-the-job experience
- Work experience suitable for a résumé
- Possible source of income to cover college expenses

Requirements & Registration for Co-op:

- Complete the Co-op application form, and determine number of work hours and appropriate credits;
- Contact program instructor or the Co-op Office prior to the beginning of the term;
- Register for 1) the appropriate Co-op course for program of study and 2) the classroom or online Co-op seminar;
- Set and accomplish (with the help of a Co-op instructor and worksite supervisor) 3–5 measurable learning objectives designed to improve job performance).
- Participate in a Co-op seminar course on workplace success skills and complete seminar assignments;
- Successfully complete 60-216 hours of work experience for 2-6 variable credits;

Credit & Grading

Cooperative Work Experience is a variable credit course; the number of credits earned depends on the number of hours worked and the program requirements. Students may earn a maximum of six Co-op credits per term a maximum of 12 Co-op credits per year.

Work/Credit Chart			
<i># of Credits</i>	<i>Hours Worked Per Week</i>	<i>Total Hours Per Term</i>	<i>Seminar Hours Per Week</i>
6 credits	18-20 hours	180-216 hours	1.5 hours
5 credits	15-17 hours	150-179 hours	1.5 hours
4 credits	12-14 hours	120-149 hours	1.5 hours
3 credits	9-11 hours	90-119 hours	1.5 hours
2 credits	6-8 hours	60-89 hours	1.5 hours

For More Information

Drop by the Cooperative Work Experience Office in the Community Center, CC129, or call 503-657-6958, ext. 2273/2232.

Co-op Student Tutors

COMMUNITY CENTER

Ext. 2324

Students working as tutors are linked with the CCC Cooperative Work Experience program which provides them with credits earned for on-the-job experience.

Eligibility for tutoring is determined by the Coordinator of Tutorial Services, and may require the recommendation of the instructor or the Advising & Counseling Center.

Disability Resource Center

COMMUNITY CENTER

Ext. 2324

Disability Resource Center (DRC) offers a wide range of services to provide students with disabilities access to college programs and activities, and auxiliary support. Services may include: interpreters for deaf and hearing impaired students, note taking options, proctored testing, taping of printed materials, test readers/writers, campus-based adaptive equipment and training, enrollment assistance, orientations, campus tours by special arrangement, referral assistance, program and career guidance, and counseling. DRC also provides faculty/staff consultations. Students requesting services must:

- Arrange to meet with the DRC counselor.
- Provide DRC with documentation from a certifying professional that establishes the existence of a current disability and supports the need for accommodations requested. Documentation is required to be on file with DRC prior to receiving services.
- Personally request accommodations through the DRC counselor.

Accessible parking (disabled parking) is available close to each campus building and disabled parking permits are obtained through the Oregon State Department of Motor Vehicles. Students needing temporary disabled parking (two weeks or less) may make arrangements through the Campus Safety Department. A letter from a physician supporting the need for temporary disability parking is required.

Clackamas Community College does not discriminate on the basis of disability or any other protected status in accordance with applicable law. The College's commitment to non-discrimination applies to curricular activity and all aspects of operation of the college.

Clackamas Community College is specifically dedicated to providing a harassment-free environment for all people with disabilities, as well as a timely and effective provision of services for students with disabilities.

Any disabled student who feels that they have been discriminated against or harassed due to their disability should contact the Disability Resource Center Coordinator.

High-Tech Center for Students with Disabilities

COMMUNITY CENTER

Ext. 2324

The TACT (Training in Adaptive Computer Technology) Center offers special testing and adaptive computer assistance for disabled students. Emphasis is placed on the use of prescriptive, adaptive computer hardware and software for academic coursework and/or vocational training.

Enrollment Services

ROGER ROOK HALL

The Enrollment Services Center provides information and assistance with admissions, registration, transcript requests, enrollment verification, student ID cards, payment, and general financial aid.

Registrar's Office

Ext. 2262

The Registrar's Office is responsible for student records and admission. Additional services include registration, special admission procedures, academic regulations, grading, degree/graduation evaluations, transcripts, and instructional standards/policies.

Evening Office

**COMMUNITY CENTER
BUILDING RECEPTION/SWITCHBOARD AREA**

Ext. 0

Services include: General Information, contact with Campus Safety for vehicle assistance and walkouts, lost and found access, pick up and drop off area for messages and materials for departments closed evening hours, copy machine and vending machine assistance, and general problem-solving and assistance for students, staff and the public.

Family Resource Center

Ext. 2526

The Family Resource Center brings together the educational, career and social support services needed for success, including basic skills education, college-credit classes, career and educational planning and child care. Through the combined resources of Clackamas Community College and other public and private agencies, the Family Resource Center can help you transition to productive employment and self-sufficiency.

Food Service

COMMUNITY CENTER

A full-service cafeteria operates in the Community Center. Vending machines are located in the Apprenticeship Training Center, Barlow, Clairmont, Community Center, Family Resource Center, Randall, and at the Harmony and Wilsonville campuses.

A coffee shop operates in the cafeteria and offers specialty coffee drinks.

Home School Option Program

COMMUNITY CENTER

Ext. 2296

The Home School Option Program enhances the home school experience of high school level students under 19 years of age by providing the opportunity to take appropriate college-level courses. The program has its own requirements for admission and retention beyond those required by the college. Contact the Home School Coordinator at ext. 2296 for more information.

Instructional Media Services

BARLOW 104

Ext. 2270

Media equipment is provided in all classrooms on campus to assist in the delivery of instructional material. An extensive library of educational video tapes is available for instructional support via the closed-circuit TV system, in the classrooms by instructor request, and at video viewing carrels for student access. The college is equipped to participate in teleconferencing.

Telecourses are an integral part of the college educational delivery system. Videotaped courses are broadcast on local cable television systems and campus video viewing carrels.

Video Viewing Carrels

DYE LEARNING CENTER

These viewing stations may be used to watch telecourses, class video assignments, and other educational video presentations. Stations are not available for recreational use.

International Students

ROGER ROOK HALL, REGISTRAR'S OFFICE

Ext. 2263

Clackamas Community College is eligible to admit and welcomes students from around the world. Please go to www.clackamas.edu for Program for Intensive English (PIE) or International Student application materials.

Latino Student Services

COMMUNITY CENTER, COUNSELING & ADVISING

Ext. 2717

The Latino Student Services office assists Latino students with registration, academic advising, and personal counseling.

Library

DYE LEARNING CENTER

Ext. 2288

The library has a collection of over 52,000 items, and also offers electronic access to the complete text of more than 3,600 journals, to newspapers, to over 3,000 e-books, to hundreds of websites and to collections at other public, college and university libraries. Librarians assist students in the use of library and Internet resources and provide formal library instruction on demand. Electronic reference assistance, interlibrary loan, reserve material, periodicals and newspapers are also available. Quiet study space and small-group study rooms are provided. Many databases may be accessed from home through the library's webpage

library.clackamas.edu The Library is available for use by students, faculty, staff, and the general public. College users are issued college ID/Library cards at Roger Rook Hall. Public users may obtain a library card free of charge at the CCC library circulation desk.

Loans

See Student Financial Services pages 7-9, 200.

Music

NIEMEYER CENTER

Ext. 2434

The Music Department sponsors a number of vocal and instrumental performing groups which are open to the community. Scholarship funds may be available for students who participate in music groups (need not be a music major). Groups include Concert Band, Jazz Ensemble, Chamber Singers, Vocal Jazz Ensemble, Clackamas Chorale (evening), Jazz Combo/Improvisation, and Pep Band (pop/blues/rock/R&B). Some ensembles require an audition.

Music MIDI and Audio Recording Studio Labs are available for students to compose, record, print, and produce music. Students may also study live sound engineering. The CCC MIDI lab houses 20 state-of-the-art MIDI work stations. The Audio Recording Lab features both analog and digital recording formats. Software includes Finale, Reason, Digital Performer, Pro Tools, CUBASE, Vision, Music Shop, Practica Musica, and Band in a Box. The Labs are available to CCC students enrolled in appropriate music classes.

The CCC Music Department is home to the Ed Beach Collection, a library of over 2,200 hours of recorded jazz. The original master tapes are now in the National Archives; this edition of the Collection is the only other edition in existence.

Registrar's Office

See Enrollment Services page 197.

Service Learning Volunteers

COMMUNITY CENTER

Ext. 2625

The Service Learning program provides volunteer/community service opportunities for CCC students. Service Learning is a two-term program which combines classroom learning with volunteer field experience. College credit is earned for participation in the program and tuition is free.

Special Events

Find events information at www.clackamas.edu/calendar

Speech & Debate: Forensics

NIEMEYER CENTER

Ext. 2726

The forensics program—speech and debate—is open to all students and offers opportunities to get involved in local and regional speech activities. The forensics team is traditionally a strong contender among Northwest colleges in both junior and novice competition, and Clackamas offers coaching in all speech events. Talent/Participation Awards and work-study positions are available for qualifying forensics team members.

Student Ambassadors

COMMUNITY CENTER

Ext. 2481

Student Ambassadors are chosen each year through an application/interview process. Ambassadors conduct campus tours, represent CCC at college and career fairs, participate in high school visits, host special events, help with New Student Experience, and staff college information booths. In addition, Ambassadors respond to requests for information that come to the college through the Web, by phone, or mail.

Student Accounts

ROGER ROOK HALL

Ext. 2253

The Student Accounts Office handles student payments, payment arrangements, accounts receivable billings and collection. Students may cash a personal check for up to \$10.

Short-Term Emergency Loans

If you are a returning student with emergency educational and financial needs, you may be eligible for a short-term emergency loan of up to \$300. See Student Accounts for an application. There is a non-refundable \$5 fee if the loan is granted.

Student Activities Office

COMMUNITY CENTER

Ext. 2245

The Student Activities Office serves as a resource and information center and coordinates student activities on campus. The office provides information on housing, transportation, insurance, student government, special events, clubs, and other programs of interest to students. The office is also the location of the campus Lost & Found.

Student Financial Services

ROGER ROOK HALL

Financial Aid

Ext. 2745

The Student Financial Services Office provides information on current aid programs, applications and forms (including the Free Application for Federal Student Aid), scholarships and waivers. Copies of expense budgets for determining eligibility, sample loan repayment schedules, and requirements for satisfactory academic progress are available. Also see pages 7-9.

Perkins Loans

Ext. 2410

Clackamas Community College offers Perkins Loan funding to students who meet all eligibility criteria. For information on Entrance and Exit Counseling and collection for Perkins loan accounts contact ext. 2410.

Scholarships

Ext. 2373

The Scholarship Coordinator helps students with information regarding scholarships and provides assistance throughout the application process. Contact the Student Financial Services Office for additional information. Also see page 9.

Veterans

Ext. 2554

The Veterans Coordinator provides assistance to veterans, spouses, and children eligible for veterans educational benefits. See page 9 for details about educational benefits.

Work Study

Ext. 2745

The Work Study program is a federal financial aid program providing part-time employment not to exceed 19 hours per week. The program is based on financial need and available to eligible students who apply early and are enrolled in at least six credits of coursework in a degree or certificate program. Applicants should use the Free Application for Federal Student Aid (FAFSA) to apply for financial aid.

Student Publications

ROGER ROOK HALL, RR135

Ext. 2310

Student publications include *The Clackamas Print*, the award-winning student newspaper published weekly during the school year, and *Synesthesia*, a literary magazine publishing student creative writing, photography, and art. Student contributions are welcome and provide good opportunities for practical experience in writing, photography, illustration, layout, desktop publishing, and graphic design. Tuition waivers are available for student editors and the advertising manager of *The Clackamas Print*. For more information and applications, see the Journalism instructor.

Testing/Assessment

ROGER ROOK HALL, 136

Ext. 2269

The Testing/Assessment Center offers a variety of testing and assessment services including:

- Computer Literacy Exam
- Computer Science Placement
- Distance Learning proctored testing
- GED (General Educational Development)
- Make-up exams (by instructor arrangement)
- Nurse Entrance Test (NET)
- Oregon Department of Agriculture Exams
- Oregon State Board of Tax Service Exams
- Placement assessment
- State of Oregon Tax Board Exams

Theatre

NIEMEYER CENTER

Ext. 2725

The Theatre Department produces one full-length play and several student-directed theatre projects each term. Workshop courses focus on the production of theatre for public performance, and everyone in the community is welcome to participate. The department also offers lecture courses which encompass technique, theory, and philosophy of Theatre Arts. College credit is available for each production, and students in need of financial assistance may qualify for tuition waivers or work-study.

Tutorial Services

COMMUNITY CENTER

Ext. 2324

Tutorial Services provides free individual and small group tutoring to eligible students in most subject areas. Tutors are available by appointment during regular college hours on the Oregon City, Harmony and Wilsonville campuses. Online tutors are also available for Distance Learning classes.

Computer Science & Math

STREETER HALL ACADEMIC COMPUTING LAB

Ext. 2736

Computer Science tutors are available in the Streeter Hall lab for all computer science classes offered at CCC.

For every level of math skill, one or more of the following is available in the lab: math tutors, computers with course-related software, and video tapes.

Literacy

DYE LEARNING CENTER

Ext. 2823

Volunteer tutors are available to teach adults basic skills.

Weight Room

RANDALL HALL

Ext. 2291

The CCC weight room facilities are open to students and the public when classes are not scheduled in the room. Equipment includes pyramid weight machines, free weights, exercise bicycles, steppers, and rowing machines.

Distance Learning

There are many alternatives to on-campus courses that allow busy students to pursue their educational goals. These courses may involve the use of computers, video, television, print materials by correspondence, voice-mail, e-mail and the Internet. Some of these courses require orientation, class meetings, lab work and testing on campus. Distance education courses are listed in the *Distance Learning* section of the quarterly *Schedule of Classes* and special icons indicate these nontraditional classes in the credit course listing.

Distance Learning

Correspondence

Ext. 2379

The Drafting Department offers a variety of AutoCAD and drafting technology courses in a correspondence format. The courses require that students have a computer and a current version of AutoCAD software.

Online

Ext. 2462

Online classes are delivered via computer. They may include lectures, labs, projects, and testing. Students interact with the instructor and other students via computer. To participate in an online course, students need access to a computer, an Internet service provider and a web browser. Computers are available on campus in the Streeter Lab and Dye Learning Center, as well as many public libraries. For more information see: dl.clackamas.edu or for statewide courses: <http://www.oregoncollegesonline.org> or <http://OregonONE.org>

Telecourses

Ext. 2270

Individual telecourses may be broadcast on campus, rented for use at home, or viewed via cable television. In addition to televised lessons, telecourse instruction may include textbooks, classroom discussion, and assignments and exams. For more information see: dl.clackamas.cc.or.us or <http://www.oregoncollegesonline.org> Call for broadcast information.

Special Programs

Apprenticeships

Ext. 2319

In order to take apprenticeship training classes, students need to first be accepted into the apprenticeship program by the Joint Apprenticeship Training Council (JATC) for that particular trade. The first step for anyone interested in an apprenticeship program is to log onto http://egov.oregon.gov/BOLI/ATD/A_Atdopen.shtml and click on the area in which you are interested in applying (Portland, Salem, Eugene, etc). You will find information about available apprenticeship training. Each apprenticeship group has their own methods and standards for selecting new apprentices.

Continued

Clackamas Community College offers courses for registered apprentices and people interested in becoming an apprentice. For an apprentice who has attained journey status, you may be able to use your journeyman card to receive credit toward an Associate of Applied Science degree.

For more information contact Tom Laugle, ext. 2319, or toml@clackamas.edu.

Basic Skills Development

DYE LEARNING CENTER
Ext. 2595

The Dye Learning Center offers academic assistance to students in all college programs. Emphasis is placed on mastering the basic skills needed to reach educational goals. Programs are available to help students earn a GED, complete a high school diploma, learn English as a Second Language, and improve basic academic skills.

Adult High School Diploma

DYE LEARNING CENTER
Ext. 2595

Clackamas Community College is authorized by the State Board of Education to award the Adult High School Diploma (AHSD). Students who enter the college's high school diploma program may transfer credits from accredited high schools. AHSD students may also enroll in college credit classes and receive high school and college credit for the same class.

Students must be at least 16 years old. Those under 18 are admitted with a referral or a release from compulsory attendance from their local high school. See the current *Schedule of Classes* for information.

REQUIREMENTS FOR ADULT HIGH SCHOOL DIPLOMA

Complete a minimum of 22 high school units:

Subject Units

Language Arts	3
(<i>Shall include the equivalent of 1 unit in written composition.</i>)	
Mathematics	2
Science	2
US History	1
Global Studies	1
Government & Civics	1
Health Education	1
Physical Education	1
Career Education	1
Personal Finance	1
Applied/Fine Arts, or Foreign Language	1
(<i>One unit shall be earned in any one.</i>)	
Technology	1
Electives	6
Total:	22

All AHSD candidates must have a ninth grade reading level or better and demonstrate minimum competency in reading, writing, speaking, listening, computing, and reasoning.

In addition to the credit and competency requirements, students must maintain a 2.0 G.P.A. at the college and successfully complete at least 12 college credits or two high school units through CCC.

Basic Skills for College Success

DYE LEARNING CENTER
Ext. 2595

The Campus Learning Center offers instruction in all basic skills including credit classes in reading, spelling, vocabulary and study skills, GED preparation, and high school credit classes. Additional study skills assistance is available through individualized discussion/counseling, and self-instructional materials and media. Both day and evening classes are held for students age 16 through adult.

General Educational Development

DYE LEARNING CENTER
Ext. 2595

Students may earn high school equivalency certificates by passing General Educational Development (GED) tests. Students must be at least 16 years old; those under 18 are admitted only with a referral or a letter of release from compulsory attendance obtained from the high school principal or counselor. A fee is charged each term. Spanish GED is also available. Refer to the current *Schedule of Classes* for local GED options.

Registration for GED preparation classes takes place in the Campus Learning Center. Department placement tests are required.

GED preparation is also available by telecourse. Thirty minute sections of GED preparation are broadcast on PBS and three local cable channels. Individual guidance is available as needed and a workbook is provided for home use.

Targeted Learning Center

CCC CAMPUS, CLAIRMONT HALL
Ext. 2638

The Targeted Learning Center (TLC) serves students age 16 through adult who want to improve their basic skills, prepare for a GED, and earn high school credits. Participation is by self referral and referral through public service agencies.

Tri-City Alternative Program

CCC CAMPUS, CLAIRMONT HALL

Ext. 2414

CCC HARMONY CAMPUS

7616 S.E. HARMONY ROAD, MILWAUKIE

Ext. 3131

The Tri-City Alternative Program (TCAP) is a college program serving 15- to 17-year-olds who plan to earn high school credits toward a diploma or prepare for a GED. TCAP provides a combination of large group/small group and one-on-one assistance for students in order to further develop academic and personal skills needed for the workplace and continuing education.

Young Parent Opportunity Program

FAMILY RESOURCE CENTER

Ext. 2592

The Young Parent Opportunity Program (YPOP) is a comprehensive educational program which provides an opportunity for pregnant or parenting teens to continue their education, increase parenting skills, and prepare for employment.

College Credit Alternatives

Ext. 2213

There are several alternative ways you can earn college credit from Clackamas Community College. Please contact the Advising & Counseling Center for additional information about the following options:

Advanced College Credit

Ext. 2657

CCC has agreements with high schools in the college district to grant credit for certain college-equivalent classes. You will register, pay for, and earn these credits while you are in high school.

CCC has agreements with the following high schools: Canby, Clackamas, Colton, Estacada, Gladstone, La Salle, Milwaukie, Molalla, North Clackamas Christian, Oregon City, Rex Putnam, Sabin-Schellenberg Center, West Linn, and Wilsonville.

For more information, contact your high school counselor or the CCC Advanced College Credit coordinator.

Advanced Placement (AP)

Ext. 2264

If you took college-level courses in high school, you may be eligible for college credit and placement into college classes. You will need to take the AP Program Examination at your high school and have your test results sent to the CCC Registrar's Office. If you qualify for advanced placement, an evaluation specialist in the Registrar's Office will work with the appropriate college department for assigning credit.

Credit for Prior Learning (CPL)

Ext. 2213

Clackamas Community College's CPL program can award college credit for knowledge and skills acquired outside the classroom. For more information contact the CCC Advising & Counseling Center.

Community Education

CCC HARMONY CAMPUS

Ext. 3230

Clackamas Community College offers a variety of adult and continuing education programs at more than 100 locations throughout the college district. These programs are designed to respond to community needs and interests and are scheduled at convenient times and locations. Classes, times, locations, and fees are listed in the *Schedule of Classes* mailed quarterly to district residences and businesses. Both credit and noncredit classes are available, including a senior study group and international travel opportunities.

Clackamas works closely with local school districts to sponsor community school offerings. Community schools offer local residents of all ages a variety of community-based programs.

For more information, contact the CCC Community Education Office or one of the following local Community Education/School offices:

Canby Community School	503-266-2086
Estacada Community School	503-630-6871
Gladstone Community School	503-650-2570
Molalla Community School	503-829-2359
N. Clackamas Community Ed./Milwaukie	503-653-3834
Oregon City Community School	503-785-8520
West Linn Community Education	503-673-7190

Clackamas also offers learning opportunities at local senior centers, care centers, and retirement homes. For more information contact 503-657-6958, ext. 3109.

English as a Second Language/ Program for Intensive English

DYE LEARNING CENTER

Ext. 2503

Clackamas Community College offers English as a Second Language (ESL) and Program for Intensive English (PIE) instruction for residents of the community and international students. Both credit and noncredit classes are offered.

Education & Human Services

FAMILY RESOURCE CENTER

Ext. 2456

The Education & Human Services department offers the Life and Career Options Program, Bridges, and classes in education, nutrition, family studies, early childhood education, gerontology, human services, and parent education.

Bridges

FAMILY RESOURCE CENTER

Ext. 2456

The Bridges program provides assistance to students, ages 16-21 in making the transition from alternative high school programs to further education, training, or the workforce. Emphasis is placed on overcoming barriers, becoming self-directed, increasing self-awareness and self-esteem, and setting career and educational goals.

Life & Career Options Program

FAMILY RESOURCE CENTER

Ext. 2456

The Life and Career Options Program (LCOP) prepares people to enter or re-enter the job market. Day and evening classes offered each term help people overcome barriers to self-sufficiency. This program helps participants explore career options, develop job-search skills, establish career and educational goals, and access community resources. Free workshops are also offered.

Evening/Weekend Transfer Degree Offerings

HARMONY CAMPUS

Ext. 3108

Classes held at the CCC Harmony Campus provide students the opportunity to obtain a transfer degree by attending evenings and weekends. These classes are listed each term in the Schedule of Classes in the Harmony Campus section. Academic advising and student services are available.

Honors

ΦΘΚ: Phi Theta Kappa Honor Society

Ext. 2210

The Clackamas chapter of Phi Theta Kappa, the international honor society for students in community colleges, offers students recognition for hard work and ways to contribute to the community.

Students who have completed at least 12 college-level credits and have a 3.5 or better cumulative grade point average are invited to join.

Membership has many benefits, including Phi Theta Kappa scholarships, society publications, and travel to regional and international meetings. They also have the opportunity to wear a gold stole and tassel at graduation, and automatic eligibility to be included on the National Deans' List. Chapter activities are centered around the society's four hallmarks: scholarship, leadership, service, and fellowship. Joining Phi Theta Kappa is a mark of distinction. Applications are available in the Student Activities office.

Community Services

Art on Campus

Alexander Gallery

NIEMEYER CENTER

Ext. 2386

The Alexander Gallery, located in the Niemeyer Center, is the only gallery in northeast Clackamas County featuring continuously changing art exhibits. The gallery displays the work of local and regional emerging artists. Lectures and presentations are often offered in conjunction with gallery exhibits. Gallery Design & Management students participate in the design and installation of these exhibitions. Opening receptions, lectures and presentations are open to the public and often provide an opportunity to meet the artists. Professional artists who are interested in exhibiting in the gallery may contact the Art Department for more information at ext. 2386.

Pauling Gallery

LINUS PAULING SCIENCE CENTER

Ext. 2386

The Pauling Gallery features art exhibits of student work. Opening receptions and presentations are open to the public and provide an opportunity to meet the artists.

CCC CAMPUS

Ext. 2333

The College has assembled a permanent collection of original art by contemporary Northwest artists. Acquisition is ongoing and directed by the Cultural Arts Committee and the Art Department. Displays may be viewed at the Art Center, Barlow Hall, Bill Brod Community Center, DeJardin Hall, Dye Learning Center, Gregory Forum, Family Resource Center, McLoughlin Hall, Niemeyer Center, CCC Wilsonville Campus, Randall Hall, Streeter Hall, as well as outdoor pedestrian spaces.

CCC Foundation**BARLOW HALL, B233**

Ext. 2402

The Clackamas Community College Foundation is a charitable, non-profit corporation dedicated to raising friends and funds for the college. The Foundation board of directors is a group of business and civic leaders who serve as community ambassadors for the college and its students. Through various fund drives, estate giving, and special events, the Foundation raises money that provides scholarships and grants for students, grants for instructional innovation, and buildings and equipment to strengthen college programs.

Child Care

See Student Services & Activities, page 195.

Community Recreation/Facilities**RANDALL HALL**

Ext. 2291

The college hosts several annual events including CCC Takedown Wrestling Tournament, youth baseball and softball camps.

Outdoor facilities at CCC include a jogging/walking trail, six tennis courts, a track, softball/baseball fields, and soccer fields. Most are available for rent when not scheduled for instructional purposes or college athletics. The weight room is open year-round when classes are not scheduled (excluding holidays). Call the Physical Education/Health Office for specific facility use arrangements, hours, and reservation rates.

Driver Education**CCC HARMONY CAMPUS/OIT METRO CENTER**

Ext. 3413

The Driver Education program offers 30 hours of classroom instruction and 12 hours of in-car instruction/observation in a dual controlled vehicle. In addition to the program offered on campus, Clackamas Community College offers driver education to high school students throughout Clackamas and Washington counties. Contact your local community school for information about the Driver Education program offered in your area.

Facility Use**GREGORY FORUM**

Ext. 2494

The community is invited to hold meetings, programs or special events at Clackamas. Rental fees will be based on current rental rates and/or services required. Call Facilities Reservations for further information.

John Inskeep Environmental Learning Center**CCC CAMPUS**

Ext. 2644

The John Inskeep Environmental Learning Center (ELC) is a 3.5 acre site located in the northwest corner of the CCC campus off Beaver Creek Road. Newell Creek bubbles to life here, then flows to the Willamette River through the 1800-acre Newell Creek watershed, the largest intact greenspace in the south metro area.

The ELC offers a shared space for wildlife habitat and environmental education for children, families, and adults. Our programs include outreach and on-site programs for students in kindergarten through sixth grade, as well as adult and youth community education covering a variety of environmental topics.

We offer professional development workshops for K-12 teachers and administrators.

Students from CCC departments may develop study programs on the site as part of their curriculum. The ELC can help develop cooperative work experience programs both on and off our site. Site tours for schools, day-care centers, garden clubs, home school, and scout groups are offered.

Many interesting volunteer opportunities are available, including teaching in fields from astronomy to zoology, nature interpretation, and site maintenance.

Continued

Haggart Astronomical Observatory

Ext. 5665 (LOOK)

Haggart Astronomical Observatory is a public observatory operated by volunteer amateur astronomers under the auspices of the CCC Science Department. The Observatory is open to the public by arrangement and on clear Saturday nights. Programs include viewing objects with a variety of telescopes, including the 24" reflector housed in the tower dome, star walks, solar viewing and star parties. For more information, visit the Observatory's website at <http://depts.clackamas.edu/haggart>

Astronomy courses are offered at CCC through the Science Department; see the listings under General Science and Physics.

Business Services

Anyone involved in business or industry in Clackamas County will find many valuable services at CCC. In addition to regular business courses offered on the main campus, the college offers customized training, seminars, workshops and other business services at CCC satellite locations.

Business Development Center

CCC HARMONY CAMPUS
7736 S.E. HARMONY ROAD, MILWAUKIE
503-656-4447
bizcenter@clackamas.edu

Clackamas Community College, in partnership with the U.S. Small Business Administration and the Oregon Department of Economic and Community Development, offers services to current and prospective small business owners and managers.

Contact the Business Development Center (SBDC) for:

GREENHOUSE: A comprehensive 20-week program for new and startup businesses consisting of class lectures and discussions, guest speakers, peer networking and individual business counseling.

SMALL BUSINESS MANAGEMENT I, II, III: A three-year program for owners and managers of established businesses to strengthen management skills through individual counseling, practical application and monthly class meetings.

WORKSHOPS/SEMINARS: Practical, low-cost training in a variety of areas of interest to small business owners and managers.

BUSINESS COUNSELING: Free individual business counseling (including financial advising and loan application assistance) with professional staff. Call 503-656-4447 for an appointment.

RESOURCE CENTER: Books, periodicals, videos, and computers with business software and Internet access are available to assist with market research, feasibility studies or business skills development.

WEBSITE: www.bizcenter.org/clackamas

Online links, statewide training schedules and other valuable small business resources available 24/7.

Customized Training & Development Services

CCC HARMONY CAMPUS
7616 S.E. HARMONY ROAD, MILWAUKIE
Ext. 3676

Customized Training & Development Services offers training customized to meet the specific needs of local businesses and public agencies.

Our training specialists can provide the following:

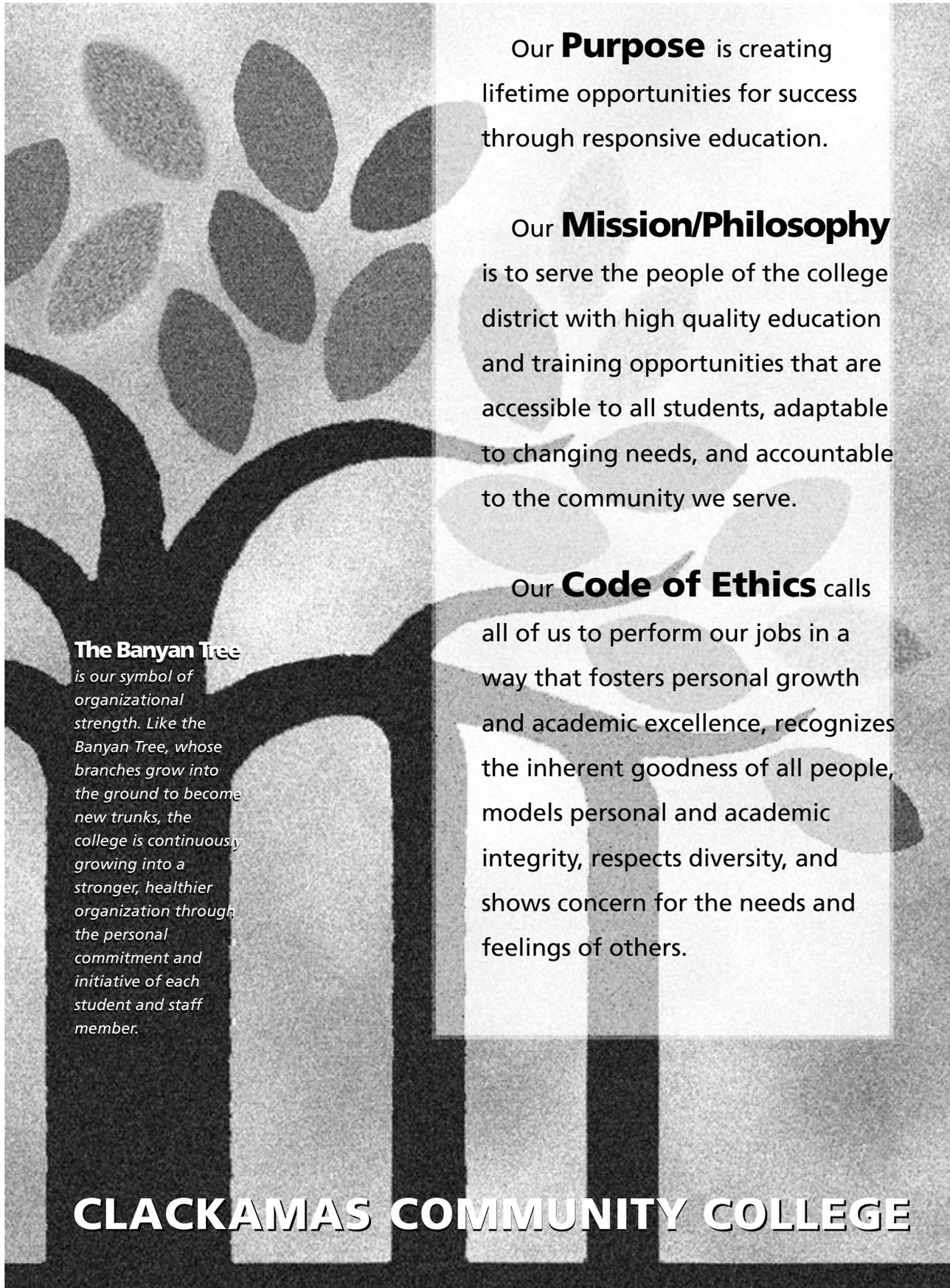
- A partnership focused on the client's business success
- Customized training programs, degrees and certificates to meet business and industry needs
- Flexible scheduling
- Instruction by facilitators experienced in teaching working adults
- Permanent records with college credit and continuing education units (CEUs)
- Training needs assessment

Customized Training & Development Services delivers training programs in:

- Communication skills and customer service
- Computer software applications
- Diversity and English as a Second Language
- Human resource development and consulting
- Leadership
- Manufacturing, CAD/CAM and technical training
- Quality and productivity improvement
- Workplace basics and assessment services
- *Train the Trainer*

Smart.

College Mission Statement



The Banyan Tree

is our symbol of organizational strength. Like the Banyan Tree, whose branches grow into the ground to become new trunks, the college is continuously growing into a stronger, healthier organization through the personal commitment and initiative of each student and staff member.

Our **Purpose** is creating lifetime opportunities for success through responsive education.

Our **Mission/Philosophy** is to serve the people of the college district with high quality education and training opportunities that are accessible to all students, adaptable to changing needs, and accountable to the community we serve.

Our **Code of Ethics** calls all of us to perform our jobs in a way that fosters personal growth and academic excellence, recognizes the inherent goodness of all people, models personal and academic integrity, respects diversity, and shows concern for the needs and feelings of others.

CLACKAMAS COMMUNITY COLLEGE

This is the Clackamas Mission.

PURPOSE STATEMENT:

“Creating lifetime opportunities for success through responsive education.”

CODE OF ETHICS

Clackamas Community College is dedicated to personal growth and academic excellence. Each member of the college community—students and staff alike—shall strive to:

- recognize the inherent goodness of all people and honor the humanity that joins us;
- practice personal and academic integrity, respecting the dignity, rights, and property of all persons;
- encourage diversity, striving to learn from differences in people, ideas, and opinions;
- demonstrate concern for others, their feelings and their needs, and treat them as we wish to be treated ourselves.

MISSION

The mission of Clackamas Community College is to serve the people of the college district with quality education and training opportunities:

- as a two-year college accredited by the Northwest Association of Schools and Colleges;
- as a publicly supported, community-based organization, governed by a locally-elected Board of Education;
- through programs and courses in professional-technical, liberal arts and sciences (college transfer), basic skills, adult interest, and custom-designed courses and support services;
- within available resources from student tuition and fees, local property taxes, state funds, and additional resource development activities (i.e., state and federal grants, individual and corporate gifts, etc.).

PHILOSOPHY

The college’s mission is implemented with a commitment to being accessible, adaptable, and accountable.

The college endeavors to be accessible by:

- maintaining an open door admissions policy;
- keeping tuition and fees as low as possible and maintaining financial aid programs;
- informing our public about available programs and services;

- encouraging student success through appropriate course placement, effective instructional strategies, recognition of diversity of learning styles, and commitment to student support;
- surmounting the geographical, physical, educational, psychological, and financial barriers that exist for district citizens;
- encouraging free and open exchange of thoughts and ideas;
- welcoming students and staff of diverse backgrounds and cultures.

The college endeavors to be adaptable by:

- asking district citizens, businesses and other community groups what programs and services are needed;
- maintaining flexibility in planning, budgeting, programming and staffing practices so that resources can be shifted as needs change;
- cooperating with other organizations to respond to common challenges;
- maintaining instructional and student support programs which recognize the diversity of learning and cultural styles;
- building productive partnerships with business and industry.

The college endeavors to be accountable by:

- maintaining appropriate standards of performance for all programs, courses and services;
- involving citizens in the budget process, the planning process, and in program development and review;
- conducting regular performance reviews for all college staff members;
- continuing efforts to make the most effective use of college resources;
- evaluating the effectiveness of educational programs and services by measuring student outcomes.

VALUES

In order to ensure quality service to our community and students and a fulfilling work environment for our staff, we subscribe to the following institutional values:

VALUES PERTAINING TO OUR COMMUNITY

Central Value: The college staff holds the institution in trust for the citizens of the district. We believe that:

- our service and instruction shall always strive to meet the highest standards;

Continued

- the college exists in a dynamic environment which encourages innovation, self-evaluation, and continuous improvement;
- the preservation of the college in the pursuit of its mission must take priority over individual concerns while safeguarding the rights and dignity of staff or students;
- academic freedom and the free exchange of ideas are essential elements of the college.

VALUES PERTAINING TO OUR STUDENTS

Central Value: The college exists to enable students to earn a college education, to prepare for the world of work, and to learn how to learn. We believe that:

- students can grow toward their full potential as they experience the joys of discovery and participate in the rigors of study;
- all students possess inner resources which can be developed and refined;
- students have the right to enroll in classes appropriate to their ability levels;
- students must take an active role in their own learning to make their educational experiences meaningful;
- students should respect the diversity and dignity of all persons.

VALUES PERTAINING TO OUR STAFF

Central Value: All college personnel must contribute to and support the educational mission of the college. We believe that:

- every staff member is a problem solver, with the right and the responsibility to identify and resolve issues they encounter on the job;
- staff members must develop and maintain a strong interest in the growth of students and the community we serve;
- effective communication and cooperation among staff members is necessary to fulfill the college mission;
- staff members are responsible for seeking opportunities for continued professional growth;
- the college is responsible for providing professional development opportunities for staff;
- each staff member is entitled to fair and honest treatment by the college.

VALUES PERTAINING TO DIVERSITY

Central Value: The college is committed to building awareness of cultural diversity on our campus and in our community. We believe in:

- respecting the inherent right of all persons to live with dignity and freedom;
- respecting individual rights of expression;
- setting a standard for the larger community by promoting tolerance, communication, and understanding among people with differing beliefs, color, gender, cultures, and backgrounds;
- encouraging affirmative action for students and staff;
- providing opportunities (curriculum development, art exhibits, theatrical presentations, special events) for increasing our awareness of cultural differences and personal life-style preferences within our college and the community.

VALUES PERTAINING TO THE ENVIRONMENT

Central Value: The college accepts responsibility as a steward of the environment. In all areas of the college's operations, we will be proactive in protecting the environment. Our educational role is not only to teach environmental principles but also to model appropriate environmental behaviors. To implement our role, we will:

- encourage students and staff to practice behaviors which are consistent with the preservation of a clean and safe environment;
- minimize the creation of waste, and repair, reuse, and recycle materials whenever possible;
- provide facilities that are safe and free from environmental hazards;
- use the most energy efficient systems available in the physical operation of the college and make energy conservation a priority when planning new facilities and retrofitting existing facilities;
- purchase earth-friendly products whenever feasible, and consider environmental effects when we plan investments in buildings, equipment, maintenance, and repairs;
- maintain a landscape that provides opportunities for environmental awareness, learning, and enjoyment by using the most environmentally compatible methods available for upkeep;
- evaluate our own performance through formal audits and by listening carefully to the observations of employees and others on ways we can improve.

VALUES PERTAINING TO DECISION-MAKING

Central Value: The college maintains an open and inclusive organizational structure which enables all members of staff to participate in the decision-making process. We believe that:

- institutional direction is driven by information received from the staff, the students, and the community;
- all employees should have a clear understanding of how they are connected to the decision-making process;
- we achieve a balance of decentralized and centralized decision-making;
- we maintain a dynamic and continuous organizational audit with the goal of continuous improvement.
- we are flexible and able to develop contingency plans to adjust to a changing environment;
- we are constantly in the process of defining and dispelling ambiguity but are able to accept a certain amount of uncertainty;
- we are constantly seeking direction from the community in policy and curriculum development.

VALUES PERTAINING TO INSTRUCTION

Central Value: Instruction is central to the mission of the college. We must foster a climate that is supportive of students and instructors as key components of the learning process. We seek to develop and maintain opportunities, resources, and strategies that support flexible, responsive instruction to meet diverse and changing student needs in a rapidly evolving educational environment. To accomplish an effective strategic plan for instruction, we recognize the core values that guide our choice of opportunities, and we outline our current priorities as future guides for action. We value:

- local departmental autonomy and academic freedom as indicative of a supportive environment for teaching;
- response to a changing student profile that emphasizes learner-centered teaching, personalized instruction, and a variety of teaching and learning styles;

- diversity in instructional programs and offerings that educate the whole student;
- leadership of faculty, together with staff and students, in instructional planning;
- interdisciplinary and college-wide sharing, communication, and teamwork;
- challenging students and encouraging lifetime learning and responsible citizenry;
- improved student access and success through annual planning and sound student placement;
- appropriate use of technology in support of instructors and instruction;
- innovation, risk-taking, and dissent in the pursuit of quality instruction;
- a focus on quality rather than growth;
- balancing productivity with the need for faculty and curricular development time;
- continued development of connections between Clackamas Community College and our educational and business partners;
- maintaining a climate that supports “us” rather than “us/them.”

Purpose, Mission, Philosophy, Code of Ethics, and Values updated and adopted by the CCC Board of Education, December 1994.

Instructional Values adopted by the VISIONS Group, May 1996.

The Clackamas Guarantee

COLLEGE TRANSFER

Clackamas Community College will refund the tuition of any CCC graduate for any transfer course work passed at CCC with a “C” grade or better, if that earned course credit does not qualify for transfer to an Oregon public college or university within two years of graduation from Clackamas.

PROFESSIONAL/TECHNICAL EDUCATION

Clackamas Community College will provide tuition-free skill training of up to 16 credits to any graduate of an Associate of Applied Science degree program in professional technical studies judged by the employer as lacking in technical job skills normally expected of an entry-level employee.

SPECIAL CONDITIONS:

Professional/Technical Studies

Degree

- The graduate must have earned an Associate of Applied Science degree in a college-recognized professional technical program as indicated on the student transcript.

Employment

- The employment must be full-time and the job must be certified by the college Career and Employer Resource Center as directly related to the graduate’s program of study.
- Initial date of employment of the graduate must be within one year after graduation.
- The employer must certify in writing that the employee is lacking specific job entry-level skills, and must specify the area(s) of skills deficiency within six months of the graduate’s initial employment.

Retraining

- Skill retraining will be limited to 16 credits and to enrollment in courses regularly offered by CCC.
- The skill retraining must be completed within one academic year.
- The employer, graduate, college counselor and the appropriate department chairperson will develop an educational plan which specifies the courses constituting the credit hours of further retraining.
- Failure, withdrawal, or audit of a retraining course counts toward the 16 credit limit.
- The graduate or the employer will pay the cost of fees, books, supplies, uniforms, and other related costs. The college will waive tuition.

TUITION REBATE

Clackamas Community College will freeze tuition rates for students who graduate from CCC within three years of their beginning term. Any tuition increase levied by the college during those three years will be refunded to the student upon graduation.

SPECIAL CONDITIONS:

Qualifications

A student must:

- complete all degree course work at CCC
- graduate within three successive years of initial enrollment
- apply for tuition rebate within one year after graduation

General guidelines (no exceptions to the following)

- A student must earn the degree within three successive years of initial enrollment at CCC.
- Any refund is determined solely on the amount of tuition increase imposed after the initial term of the three successive years. For students whose residency changes during their enrollment, the rebate will be based on the tuition paid for each term. No rebate will be made for tuition paid towards the residency differential.
- A tuition refund cannot be claimed for any term during which a student received financial aid or direct sponsorship for tuition, except loans.
- All course work for a degree must be completed at CCC. (Transfer students do not qualify.)
- The refund applies only to the first 93 credits needed to complete a degree program.
- Only one refund per student is allowed.
- Application for a refund must be made within one year of the student’s graduation date.

For further information

Call Clackamas Community College Registrar’s Office at 503-657-6958, ext. 2262.

2003-2004 STATISTICS:**HEADCOUNT**

Headcount	25,316
Full-time students	1,618
Part-time students	13,377
Non-credit students	10,321
Full-time Equivalence	8,102
Average age, all students	32 years
Average age, full-time students	25 years
Females	12,136 (48%)
Males	12,377 (49%)
Racial/ethnic minorities in student body	11.8%
Students receiving financial aid	2,715
Average amount of aid per student	\$3,350
Total amount of aid received	\$9,112,000
Degrees/certificates awarded	807
Graduation rate 2000 (cohort)	14.4%

For more information on these and other college statistics, contact the Research Office at 503-657-6958, ext. 2425.

CCC at a Glance

Numbers reflect 2003-04 data unless otherwise noted.

SERVICE AREA

CCC District: All of Clackamas County except Lake Oswego, Sandy, Damascus, and Boring school districts.

District Population: estimated – County 353,450 (July 1, 2003)
District (76.5%) = 270,389

ENROLLMENT

2003-04 Headcount: 25,316

2003-04 Full-time Equivalence: 8,102

PROGRAMS

Professional/Technical: CCC offers one-year Certificate of Completion and two-year Associate of Applied Science degree programs in 30 professional/technical career areas and General Studies.

College Transfer: CCC offers the two-year Associate of Arts Oregon Transfer degree, completion of which allows the student to meet the general education requirements of the baccalaureate degree program, and have junior standing for the purposes of admission and registration, at any Oregon University System (OUS) institution.

Literacy/Basic Skills: CCC offers individualized instruction in basic academic and study skills, including Adult High School Diploma, GED, ESL, Alternative Schools, Life & Career Options, and Young Parent Opportunity Program.

Community Education: CCC offers credit and non-credit personal interest and enrichment courses through district community schools at more than 100 locations.

Business Training: CCC offers contracted employee training through the Customized Training & Development Services program and assistance to small businesses through the Business Development Center.

CCC President

Earl "Joe" P. Johnson

Board of Education

Ron Adams

Jean Bidstrup

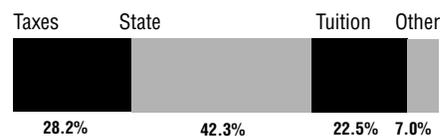
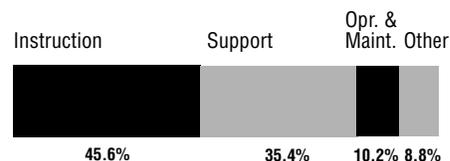
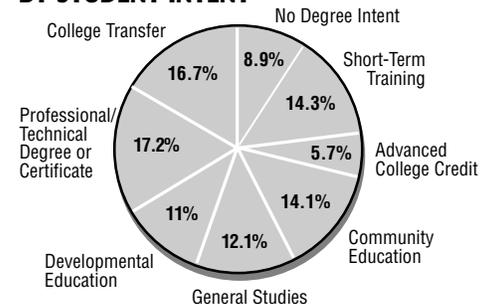
Chuck Clemans

Judith Ervin

Estle Harlan

Ross Smith

Larry Wright

BUDGET**GENERAL FUND RESOURCES 2003-2004****GENERAL FUND EXPENDITURES****ENROLLMENT BREAKDOWN BY STUDENT INTENT**

Smart.

Faculty & Administration

**CLACKAMAS COMMUNITY COLLEGE
BOARD OF EDUCATION**

	Term ends
Larry Wright	2009
Jean Bidstrup	2009
Ross Smith	2009
Judy Ervin	2009
Chuck Clemans	2007
Estle Harlan	2007
Ron Adams	2007

**CLACKAMAS COMMUNITY COLLEGE
PRESIDENT**

Dr. Earl P. "Joe" Johnson

FACULTY & ADMINISTRATION

Acord, Donna (2003)
Dean/Extended Learning Center
B.S. University of Oregon
M.S. Stanford University

Allen, William H. (1996)
Computer Science
B.A. Willamette University
B.S. University of Utah
M.B.A. Portland State University

Andersen, David (1997)
Art
M.F.A. Brigham Young University

Anderson, Janet (1990)
English
A.S., A.D.N., R.N. Clark College
B.A. University of California
M.A. Portland State University

Anderson, Linda C. (1988)
Computer Science
B.S. Stanford University
M.S. Walden University

Arata, Charles (1994)
Operations Manager, Campus Services
A.G.S. Clackamas Community College

Arita, Carolyn (2004)
Director, Financial Services
BA Western Washington University

Arter, David B. (1986)
Physical Science
B.A. University of California
Ph.D. University of Illinois

Ashbaugh, Richard (1990)
Criminal Justice
B.S. Parsons College
M.A. Western Seminary

Atkins, Sarah (2004)
Nursing
B.S.N. Oregon Health Science University
M.S. University of Portland

Austen, Wayne (1987)
Auto Body
A.S. Portland Community College
State of Oregon Vocational Certification

Austin, Joe (2004)
Dean/Chief Information Officer
B.S. University of Redland

Bachmann, Anne B. (2000)
English as a Second Language
B.A. Portland State University
M.A. Portland State University

Baker, Nancy C. (1987)
Skills Development
B.A. Indiana University
M.A. University of Oregon

Baratto, Stefan (2000)
Mathematics
B.G.S. University of Michigan
M.S. University of Oregon

Bergman, Barry F. (1989)
Mathematics
B.A. Reed College
M.S. San Jose State University

Bjerre, Irma C. (2000)
International Education
B.A. University of Nevada
M.A. University of Nevada

Blessman, David G. (1998)
Counseling
B.S. Portland State University
M.S.Ed. Portland State University

Bohach, John (2004)
Automotive
Master Medium Technician
Professional Technical Teacher License

Bown, Jennifer P. (2003)
Life Science
B.S. University of Nevada, Reno
M.S. University of Nevada, Reno

Bradley, David A. (1999)
Automotive Programs
A.G.S. Clackamas Community College

Brennan, Kelly J. (1996)
Forensics, Speech
A.A./A.S. Clackamas Community College
B.S. Portland State University
M.A. Washington State University
Ph.D. Capella University

Briare, William V. (1996)
Religion
B.S. University of Nevada
M.A. Mt. Angel Seminary

Brodnicki, Nora E. (1999)
Art
B.A. Hartwick College
M.A. Syracuse University
M.F.A. State University of New York

Brown, Melinda Jo (1992)
Student Activities
A.A. Clackamas Community College
B.S. Oregon State University
M.S.T. Portland State University

Brown, Stephen (1980)
Physics
B.S. U.S. Merchant Marine Academy
M.S. Portland State University

Bryant-Trerise, James L. (1998)
English
B.A. University of California
M.A. Claremont Graduate School

Burnell, Carol (2004)
English
B.A. San Francisco State University
M.A. University of Portland

Caldera, Sue (2004)
Welding/Manufacturing
Welding Certificate, Mt. Hood
Community College

Campbell, David (1981)
Counseling
B.A. Grove City College, Pennsylvania
M.S. University of Buffalo, New York

Carino, Debra A. (2001)
Computer Science
B.A. Boston University
M.S. California State University

Cate, Caroline L. (1990)
English as a Second Language
B.A. Portland State University
M.Ed. Oregon State University

Christophersen, Kristin A. (2000)
Sociology
B.S. Portland State University
M.S. Portland State University

Cline, Lonnie (1981)
Music
B.M.E. University of Oregon

Coffey, Amanda L. (1998)
English
B.A. Virginia Commonwealth University
M.F.A. Arizona State University

Connett, Dian (1980)
Vice President/Instructional Services
B.S. Ohio State University
M.S. Ohio State University
Ed.D. Portland State University

- Cook, C. LeRoy (2003)**
Drafting Technology
B.S. University of Montana
M.H.R.O.D. University of San Francisco
- Cornelius, Trista G. (2002)**
English
B.A. Pacific University
M.A. Portland State University
- Cross, Douglas B. (2001)**
Computer Science
B.S. University of Oregon
M.S. University of Oregon
M.S. California State University,
Hayward
- Curry, Merlin (2001)**
Emergency Medical Technology
Oregon Certified Paramedic
Certified AHA Advanced Cardiac Life
Support Instructor
Certified Pediatric Advanced Life
Support Provider
Certified Prehospital Trauma Life
Support Provider
- Darris, M. Dean (1994)**
Political Science
B.S. Portland State University
M.S. Portland State University
Ph.D. Berne University, West Indies
- DeFontes, Gale (1979)**
Information/Switchboard/Facilities Office
A.S. Clackamas Community College
B.A. Marylhurst University
- DelGatto, Robert (2003)**
Manufacturing
- DeSau, Carol (2001)**
Bookstore
B.A. Portland State University
- DeVenney, Jean E. (1999)**
Counseling
B.S. Southern Oregon State College
M.S. Portland State University
- Dickinson, James (1994)**
Mathematics
B.S. Oregon State University
M.S. Portland State University
- Dickson, David (1980)**
Vice President/College Advancement
B.A. Stanford University
M.S. University of Oregon
- Dodge, Trevor (2004)**
English
B.A. University of Idaho
M.A. Illinois State University
- Dodson, Carol D. (2001)**
Nursing
B.S. Sonoma State University
M.S. Oregon Health Sciences University
- Donelson, Anne (1998)**
Director/Public Affairs
B.S. Portland State University
- Drebin, Diane (1998)**
Registrar
A.A. Clackamas Community College
A.S. Clackamas Community College
B.A. Marylhurst University
M.S. Portland State University
- Durham, Linda (1996)**
Skills Development
B.A. Whittier College, California
M.S. Oregon State University
- Eaton, Leonard G. (2001)**
Computer Science
B.S. Oregon State University
M.Ed. Portland State University
- Espino, Richard (1999)**
Life Science
A.A. Clackamas Community College
Doctor of Chiropractic, Western States
Chiropractic College
- Falkenstein, Peggy (1996)**
Customized Training & Development
B.A. Marylhurst College
M.P.A. Portland State University
- Fallon, Kathleen S. (2001)**
English as a Second Language
B.S. Oregon State University
M.A. Oregon State University
- Fiskum, Paul K. (1976)**
Physical Education
B.S. Oregon College of Education
M.S. Portland State University
- Flippo, Ida (1997)**
Criminal Justice
B.S. Southern Oregon State College
M.A.T. Willamette University
- Flodin, Susanna (2004)**
Library
B.S. Pacific Lutheran
M.S. Library and Information Studies
- Flowers, Jackie (1997)**
History
B.A. Appalachian State University
B.A. University of Tennessee
M.A. University of South Carolina
Ph.D. University of South Carolina
- Ford, Loren (1984)**
Psychology
B.A. California State University,
Long Beach
M.A. California State University,
Long Beach
- Francis, Eden A.R. (2003)**
Chemistry
A.A.S. Cottey College
B.S. Linfield College
M.S. University of Oregon
- Frank, William W. (1998)**
Customized Training & Development
B.A. University of California
M.S. Eastern Washington University
- Giltz, R. Scott (1996)**
Dean/Technical Career Education
Division
State of Oregon Vocational Certification
A.A.S. Clackamas Community College
- Godfrey, Jan A. (1992)**
Dean/Counseling/Career Planning/
Student Activities
B.A. Fresno State College
M.S.W. Portland State University
- Goldstein, Alice (2000)**
English as a Second Language
A.B. Stanford University
M.A. Portland State University
J.D. University of California, Berkeley
- Grabill, Jr., James R. (2002)**
English
B.F.A. Bowling Green State University
M.A. Colorado State University
M.F.A. Colorado State University
- Gray, Kate (1992)**
English
B.A. Williams College
M.F.A. University of Washington
- Griffiths, David (2004)**
Director, Workforce Development
B.S. University of Georgia
M.Ed. University of Georgia
- Grimaldi, Hugo (1997)**
Business
B.S. Loyola University of Louisiana
M.B.A. University of Portland
- Grossmann, Sandra J. (1998)**
Psychology
B.A. Metropolitan State College
M.S. Portland State University
- Hall, Adam L. (1998)**
Mathematics
B.S. Portland State University
M.S. Portland State University
- Halliday, Karen L. (2000)**
Library
B.A. University of Washington
M.S. University of Washington
M.L.S. University of Washington
- Hamel, Nicolas N. (1999)**
Physical Science
B.S. Oregon State University
Ph.D. Portland State University

- Hamm, Paula L. (2001)**
Education
B.A. Marylhurst College
M.A. University of Illinois
- Hanson, Catherine (2001)**
Skills Development
B.A. Eastern Oregon University
M.S. Portland State University
- Harber, Renee (2004)**
Horticulture
B.S. Ball State University
Ph.D. Oregon State University
- Harlow, Franklin I. (1977)**
Speech
B.S. Southern Oregon State College
M.A. University of Northern Colorado
- Hartsock, Donald G. (1988)**
Philosophy
B.A. Colorado State University
M.A. Colorado State University
M.A. University of Allahabad, India
- Hatfield, R. Dale (1994)**
Business
B.S. Oregon State University
M.B.A. University of Portland
- Hearing, Sylvia J. (1998)**
Customized Training & Development
B.A. Portland State University
M.B.A. City University
- Helbig, Ronald E. (1992)**
Building Construction
State of Oregon Vocational Certificate
A.S. Clackamas Community College
- Herman, Brenda (1987)**
Mathematics/Computer Science
B.A. Lenoir Rhyne College, North Carolina
M.A. University of North Carolina
- Holcomb, David K. (2000)**
Director/Bookstore
B.S. Marylhurst University
- Hoover, Sarah (2004)**
Geology
B.S. North Carolina State University
M.S. University of Oregon(2004)
- Howley, Elizabeth A.M. (1983)**
Horticulture
A.S. Stockbridge School of Agriculture
B.S. University of Massachusetts
- Jackson, Jr., James E. (1991)**
Director/Health/Physical Education/
Athletics
Title 9 Coordinator
B.S. U.S. Naval Academy
B.A. University of Iowa
M.S.T. Portland State University
- Jackson, Mary Jo (1998)**
Director/Financial Aid
B.S. University of Oregon
M.S. Portland State University
- Johnson, Earl "Joe" P. (2001)**
President
B.A. University of the Pacific
M.L.I.R. Michigan State University
Ph.D. University of California, Berkeley
- Jones, Michael L. (1988)**
Drafting Technology
A.S. Chemeketa Community College
- Jones, Thomas G. (1986)**
Small Business Development Center
A.A. Brookdale City College,
New Jersey
B.A. Thos. A. Edison College of
New Jersey
M.S. Marylhurst College
Ph.D. Walden University
- Junquera-Santana, Henry (2004)**
Foreign Language
B.A. San Diego State University
M.A. San Francisco State University
M.B.A. National University
- Keala, Kelly (2004)**
Drafting
B.S. University of Utah
- Keeler, Robert (1997)**
Anthropology
B.A. University of North Carolina
M.A. Idaho State University
Ph.D. University of Oregon
- Ketchum, Ken R. (2000)**
Automotive Technology
A.G. Portland Community College
A.A.S. Portland Community College
Vocational Education Teaching Degree,
Portland Community College
- Korfhage, Julie (2003)**
Drafting
A.S. Clackamas Community College
- Kyser, Carrie L. (2001)**
Mathematics
B.S. Eastern Michigan University
M.S. Cleveland State University
- Landauer, Edwin G. (1988)**
Engineering Sciences
B.S. Portland State University
M.S.T. Portland State University
M.S. Montana State University
M.S. University of Central Florida
- Laugle, Thomas N. (1990)**
Apprenticeship/Wildland Fire/ESH
A.A. Clackamas Community College
A.A.S. Portland Community College
B.A. Marylhurst University
- Leach, William W.**
Dean/Campus Services
B.A. California State College Stanislaus
- Leuck, Jay (2003)**
Automotive
A.S. Southwestern Oregon Community
College
B.S. OIT
- Lewandowski, Kurt L. (1990)**
Mathematics
B.S. Southern Utah State College
M.S. Oregon State University
- Lewis, Alice (2003)**
Speech
A.A. Seattle Central Community College
B.A. Portland State University
M.A. Portland State University
- Lewis, Eric W. (1993)**
Psychology
B.A. California State Fullerton
Ph.D. University of Nevada
- Lewis, John C. (1982)**
Water Quality Technology
B.S. Portland State University
M.S. University of Idaho
- Locke, Wesley M. (1998)**
Manufacturing Technology
A.S. Clackamas Community College
- Mach, Susan (1997)**
English
B.A. Pacific University
M.A. Boston University
- Mackey, Terry K. (1998)**
Library
B.A. University of Montana
M.L.S. Indiana University
- Maloney, Lynne H. (1990)**
Life and Career Options
B.S. University of Oregon
M.A. Lewis & Clark
- Marks, Brenda A. Inglis (1995)**
Skills Development
B.S. Oregon State University
M.S. University of North Texas
Ed.D. Oregon State University
- Martineau, James B. (2001)**
Health/Physical Education
B.S. Southern Oregon University
M.S. Western Oregon University
- Martinez, Guadalupe (2000)**
Counseling
B.A. Oregon State University
M.A.I.S. Oregon State University
- Martini, Karen J. (1999)**
Director of Development
B.S. Portland State University

- Mattson, Michael W. (1996)**
Manufacturing Technology
B.S.I.T.E. Purdue University
M.A. Oregon State University
- Mayer, Lillian M. (1992)**
Life Science
B.A. California State University
M.A. California State University
- McDonough, Donna M. (1986)**
Skills Development
A.A. North Idaho College
B.A. Eastern Washington University
M.Ed. Oregon State University
- McFarland, Patricia G. (2000)**
History
B.A. University of Southern Mississippi
M.A. University of Southern Mississippi
Ph.D. Louisiana State University
- McHone, Keoni (2004)**
PE/Cross Country Coach
B.S. Western Oregon University
M.S.Ed. Western Oregon University
- McIlveen, Patricia J. (1998)**
Family/Human Services
B.S. Western Michigan University
M.Ed. Florida Atlantic University
Ed.D. Portland State University
- Meiser, James R. (1977)**
Extended Learning Center
B.S. School of the Ozarks
M.A.T. Lewis & Clark College
- Meuser, Ellis (2004)**
Skills Development
B.Th. Northwest Christian College
M.S. Western Oregon University
- Middendorff, Carol A. (1983)**
Business
A.A. Southwestern Oregon Community College
B.A. Oregon State University
M.S.T. Portland State University
- Miller, David W. (1998)**
International Education
B.A. University of Montana
B.A. Portland State University
M.A. Portland State University
- Miller, Nick (2003)**
Automotive Technology
A.A.S. Clackamas Community College
- Mills, David J. (2001)**
Music
A.A. Mt. Hood Community College
B.S. Westminster College
M.M.E. Lewis & Clark College
- Mingo, Andrew (2004)**
English
B.A. University of Nevada
M.F.A. Oregon State University
- Misley, Robert R. (1986)**
Biology
A.A. Clackamas Community College
B.S. Eastern Oregon State College
M.A.T. Lewis & Clark College
- Mitchell, Cathy (1980)**
Loan/AR Cashier Assistant Administrator
A.S. Clackamas Community College
- Mitchell, Maureen G. (2002)**
Director/Health Sciences
R.N. Algonquin College
R.N. Ottawa Civic Hospital
B.S.C.N. Brandon University
- Molatore, Dominic (1985)**
Computer Science
B.S. Oregon State University
B.S.C.S. Portland State University
- Moller, Steffen A. (1998)**
Computer Science
B.A. Union College
M.A. Andrews University
- Mount, David B. (1992)**
English
B.A. California State University
M.A. University of California, Los Angeles
- Munro, Suzanne L. (1998)**
English as a Second Language
B.A. Westmont College
M.A. Fuller Theological Seminary
M.A. San Francisco State University
- Nelson, Bruce A. (1998)**
Horticulture
B.A. University of Pennsylvania
M.S. Washington State University
- Nelson, Robert J. (1990)**
Horticulture
B.S. University of Idaho
M.S. University of Idaho
- Nelson, Tracy (2004)**
HPE/Head Women's Soccer Coach
B.S. University of Portland
M.Ed. Portland State University
- Nielsen, Lisa (2003)**
Skills Development
B.A. University of Oregon
MEd Pennsylvania State University
- Nopp, Catherine (2004)**
Special Projects Manager, Workforce Development
B.A. Washington State University
M.A. Washington State University
- Nordstrom Hull, Rhonda (2003)**
Mathematics
A.S. Clackamas Community College
B.S. Oregon State University
M.S. Portland State University
- Ogden, Rebecca (1996)**
Skills Development
B.S. Portland State University
M.S. Southern Oregon State College
- Olds, John P. (1986)**
Business
B.S. Whitworth College
M.B.A. University of Oregon
Mstr/Tax Portland State University
Juris/Dctr University of Washington Law School
- Orlando, Emily (1980)**
English
B.S. State University College, New York
M.S. St. Johns University
- O'Toole, Gayle (1983)**
Customized Training & Development
B.S. Arizona State University
M.A. Antioch University
- Patrick, Tanya (1994)**
Business
B.A. California State University
M.S.T. Portland State University
- Pearson, Kirk (1986)**
Director/Campus Services
- Ponce, Joanna (2004)**
Skills Development
B.A. San Francisco State University
Ed.M. Oregon State University
- Reilly, Nicole L. (2002)**
Nursing
B.S.N. Clemson University
M.N. University of Washington
- Robinson, Robin A. (1989)**
Physical Education
B.S. Willamette University
M.A.T. Lewis and Clark College
- Rueb, Richard (1995)**
Life Science
B.S. University of South Dakota
M.S. Rutgers University
- Ryan, Joan S. (1994)**
Business
B.S. Southern Oregon State University
M.S. Oregon State University
M.B.A. Oregon State University
- Sanchez, Camilo (2005)**
Skills Development
B.A. Mexico State
- Schneider, Karen T. (2001)**
Nursing
Nursing Diploma, St. Vincent School of Nursing
B.S.N. Oregon Health Sciences University
M.S.N. University of Portland

- Scrivener, Jack (1980)**
Mathematics
B.S. University of Kansas
M.S. Southern Oregon State College
- Seaman, Lynn (1988)**
Business
B.S. Oregon State University
Ed.M. Oregon State University
- Shackelford, Alan M. (2002)**
Economics
B.S. Portland State University
M.S. Portland State University
- Shea, Tim (1998)**
Small Business Development Center
A.A. Santa Barbara City College
B.S. Portland State University
M.B.A. Portland State University
- Smith, Kathleen (1992)**
College/Foundation Board Executive Assistant
A.S. Clackamas Community College
- Smith, Michelle J. (2002)**
Nursing
B.S.N. University of Portland
M.S.N. University of Portland
- Smith-English, David (1995)**
Theatre
B.A. Lewis & Clark College
M.A.T. Lewis & Clark College
- Sprehe, Tara L. (2001)**
Student Outreach and Service Learning
B.A. University of Oregon
M.S. Miami University
- Stone, Karen A. (1983)**
Director/Customized Training & Development Services
B.A. Stanford University
M.S. Marylhurst
- Stopper, Karen (2004)**
Medical Assistant/Health Science
A.S. College of DuPage
Oregon EMT - Intermediate
- Strickland, Christina (1983)**
Life Science
A.S. Umpqua Community College
B.S. Oregon State University
M.S. Texas Women's University
- Stubblefield, Karen (1998)**
Director/Human Resources
Section 504 Coordinator
- Tank, Brenda (2005)**
Vice President/College Services (Interim)
- Taylor, Kathleen A. (1991)**
Mathematics
B.S. University of Portland
M.A.T. University of Portland
- Tepper, Glenda M. (1999)**
Associate Dean of Student Services
A.A.S. Oregon Institute of Technology
B.S. Oregon Institute of Technology
M.B.A. Southern Oregon University
- Thorn, Carol A. (2002)**
Nursing
B.S.N. Oregon Health Sciences University
M.S.N. University of Portland
- Topping, Robert P. (1993)**
Building Construction/UTA/ERM
A.A. Portland Community College
B.S. Portland State University
M.Ed. Oregon State University
- True, J. Rick (1995)**
Art
B.A. University of New Mexico
M.F.A. Portland State University
- Tuffli, Theresa A. (1982)**
Dean/Wilsonville Campus/Harmony Campus
A.S. Clackamas Community College
B.A. George Fox College
M.B.A. George Fox College
- van der Bijl, Baldwin (1978)**
Dean/Science/Math/Allied Health
B.A. University of California
M.S. California State University
- Vogt, Linda M. (1986)**
Student Publications/Journalism
B.S. University of Oregon
M.A.T. Lewis & Clark College
- Wakeling, Thomas W. (1999)**
Music
B.S. Portland State University
M.S.E. University of Portland
- Wand, Helen (2004)**
Clinical Lab Assistant
B.S. Marylhurst University
- Wanner, Paul J. (1992)**
Manufacturing Technology
A.A. Clackamas Community College
State of Oregon Vocational Certificate
- Ward, David W. (2001)**
Drafting Technology
A.S. Clackamas Community College
A.A. Clackamas Community College
Oregon Department of Education Certificate
- Whitley, Dena (1978)**
Purchasing Assistant Administrator
A.A. Clackamas Community College
- Widerburg, Allen (1987)**
English
B.A. University of Utah
M.A. Portland State University
- Williams, Molly (1980)**
English as a Second Language
B.A. Lewis & Clark College
M.A. Portland State University
- Wilson-Dean, Lynn (2004)**
Skills Development
B.S. Portland State University
M.A.T. Lewis and Clark University
- Wolfson, Ellen (1985)**
Counseling
B.S. Portland State University
M.S.W. Portland State University
- Woods, Kathleen M. (1983)**
Physical Education
B.S. Oregon State University
M.Ed. Oregon State University
- Wynia, Marilyn A. (1979)**
Physical Education
B.S. Oklahoma State University
M.A. Oklahoma State University
- Yannotta, Mark A. (1998)**
Mathematics
B.S.E. Southeast Missouri State
M.A. University of Missouri
- Zuelke, William (1997)**
Counseling
B.A. Gonzaga University
M.Div. Weston School, Cambridge, MA
M.S. Loyola College

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