

Expanding Minds, Facilities and Opportunities

CATALOG 2002-2003



DATES TO REMEMBER 2002-2003

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

SUMMER TERM	2002
Classes begin	Monday, June 24
Independence Day Holiday (college closed)	Thursday, July 4
Eight-week session ends	Thursday, August 15
Eleven-week session ends	Thursday, September 5
Labor Day (college closed)	Monday, September 2
FALL TERM	2002
Classes begin	Monday, September 30
Veterans' Day Observance (college closed)	Monday, November 11
Thanksgiving (college closed)	Thurs.-Fri., November 28-29
<i>(Wednesday evening classes, beginning at 4 p.m. or later, are canceled prior to Thanksgiving.)</i>	
Finals week	December 9-14
Term ends	Saturday, December 14
Christmas Holiday (college closed)	Tues.-Wed. December 24-25
WINTER TERM	2003
New Year's Day (college closed)	Wednesday, January 1
Classes begin	Monday, January 6
Martin Luther King Jr. Day (college closed)	Monday, January 20
Skills Contest (Day classes are canceled at the O.C. campus only.)	Thursday, February 27
<i>(All evening classes, beginning at 4 p.m. or later, will be held as scheduled.)</i>	
Finals week	March 17-22
Term ends	Saturday, March 22
Spring Break	March 24-29
SPRING TERM	2003
Classes begin	Monday, March 31
Memorial Day (college closed)	Monday, May 26
Finals week	June 9-14
GED/Adult High School Diploma Graduation Ceremony	Thursday, June 12
College Certificate/Degree Graduation Ceremony	Friday, June 13
Term ends	Saturday, June 14

Expanding Minds, Facilities and Opportunities...

In November 2000, Clackamas County voters passed a \$47 million bond measure providing Clackamas Community College the opportunity to upgrade aging facilities, add needed classrooms and improve technology. New construction is expected to continue through 2004. The improvements will allow CCC to better serve students in one of the fastest growing districts in Oregon.

Our Credentials

Clackamas Community College is accredited by the Commission on Colleges of the Northwest Association of Schools & Colleges. 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, 2002. 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.

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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.

Getting Started

1. Fill Out an Application for Admission

General Admission

REGISTRAR'S OFFICE
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:

- in this section of the catalog
- on the CCC website, www.clackamas.cc.or.us
- at your high school counseling office
- at any of our campuses (Oregon City, Wilsonville or Harmony)

Application materials* can be submitted at the Help Center in the Bill Brod Community Center building 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 and Course Equivalency Request form to the Registrar's Office.*

Special Admissions Program

Some of our programs have limited enrollment and 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 your faculty advisor or a staff member in the Advising and Counseling Center. Please note the following special admission programs, requirements and phone extensions for additional information:

Accelerated Degree

Ext. 2214

See page 189, Special Programs.

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

Ext. 2595

See page 189, 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 the 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 main campus at the Help Center, the Advising & Counseling Center, the Registrar's Office, or on the CCC website at www.clackamas.cc.or.us/coadmit/coadmit.htm

International Students/ Program for Intensive English (PIE)

Ext. 2263

Clackamas Community College is approved by the Immigration and Naturalization Service (INS) 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). International students must also provide documentation of financial support and pay an application fee.

English as a Second Language (ESL) instruction is offered through the Program for Intensive English (PIE) for students *without* a 523 TOEFL score.

Medical Assistant

Ext. 2263

Admission to the program 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 Help Center, the Advising & Counseling Center, the Registrar's Office, or on the CCC web page under the *Forms/Documents* 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 Help Center, the Advising & Counseling Center, the Registrar's Office, or on the CCC web page under the *Forms/Documents* link.

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.

2.

Arrange for Financial Aid

Office of Student Financial Services

503-657-6958, Ext. 2422

Clackamas Community College offers a full financial aid program. In 2000-2001, the college awarded \$4.6 million in financial aid to 1,746 students. You can 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 application packets are available in the Student Financial Services Office. They contain expense budgets for need-based financial aid and information about how financial aid is awarded. The Student Financial Services Office also has sample repayment schedules for Federal Perkins Student Loans, Federal Stafford Student Loans and Federal PLUS Loans.

You 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

Continued

limited to five terms of full-time enrollment. Contact the Student Financial Services Office for information on requirements for part-time students.

If you do not maintain a 2.0 GPA, take minimum credit requirements, or attend through 60% 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. 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. If you withdraw from classes and have a tuition refund due, the money may be returned to the financial aid fund from which it came. Clackamas follows required federal Title IV refund policies.

For more information about financial aid, please contact the Student Financial Services Office at ext. 2422, 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. Be sure to use the CCC Title IV Code: 004878 when applying for aid.

Federal & State Financial Aid Programs

FEDERAL PELL GRANTS

You may be eligible for up to \$4,000 a year (2002-03), 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 (2001-02). Part-time students (taking 6-11 credits a term) will receive smaller grants.

OREGON STATE NEED GRANTS

You must be enrolled full-time (taking 12 or more credits a term) to be eligible for Oregon State Need Grants. You may be eligible for up to \$1044 (2001-02), and awards are renewable for up to four years.

Oregon Need Grants are funded through the Oregon Student Assistance Commission. If you are not an Oregon resident, contact the Scholarship Commission in your home state for eligibility requirements.

FEDERAL COLLEGE WORK-STUDY

You may be eligible for 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 hours than full-time students.

FEDERAL PERKINS STUDENT LOANS

You may be eligible for up to \$2,400 (2002-2003) 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 halftime enrollment (under six credits a term). Entrance and Exit Interview counseling sessions are required.

FEDERAL STAFFORD STUDENT LOANS

If you are an Oregon resident, you may be eligible for a guaranteed student loan from a commercial bank, savings and loan organization, or other participating lender. You may borrow up to \$2,625 a year. You must begin repaying these loans six months after you drop below halftime enrollment (under six credits a term). Entrance and Exit Interview counseling sessions are required.

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.

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.

CCC Financial Aid Programs

Ext. 2422

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.

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 \$200. You don't need a financial aid form to apply. Contact the Student Financial Services Office for an emergency loan application.

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. Scholarship opportunities can be viewed online in the One-Stop Career Center. For an appointment contact the One-Stop Career Center, ext. 2213.

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 receive your information electronically from the processing center and contact you at that time for further documentation.

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 of the school year you plan to attend.

Continued

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.
- 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

503-657-6958, Ext. 2269

Call for testing hours.

The Testing/Assessment Center is one of the first stops 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.

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 previous attended college transcripts to the Registrar's Office for recommended placements in writing and math courses at Clackamas Community College.

4. *Talk to a Faculty Advisor or Counselor/ Advisor*

Advising & Counseling 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 one-hour session will provide you with general information about the college, and the registration process. Advisors and faculty will work with you individually to help you plan and schedule classes. 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 can provide specific information about your program of study, as well as serve as a mentor. Your faculty advisor's name, email address, extension number and office number are listed in the *Schedule of Classes* published each term.

If you haven't decided on your program of study, make an appointment with your faculty advisor or a staff member in the Advising & Counseling Center to

help you develop an educational plan. Staff in the Advising & Counseling Center are available to help you choose the right program, select classes, as well as help you resolve personal problems that could interfere with your studies. Drop in for advising help or call to make an appointment.

If you plan to transfer to a four-year institution, work closely with an advisor or counselor to be sure you are fulfilling that school's transfer requirements. Catalogs for all Oregon colleges and universities are available in the Advising & Counseling Center. There is also access to thousands of college catalogs via CD-ROM.

No matter what program you are working on, you should work with an advisor or counselor to be sure that you're taking classes that meet your goals. Periodically throughout your program, request an official evaluation to check your progress.

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, email addresses and room numbers are located in the registration information section of the *Schedule of Classes* which is published each term.

5. Register for Classes

Registrar's Office

503-657-6958, Ext. 2262

Registration is available for currently enrolled, returning and new 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.cc.or.us

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 Help Center in the Community Center or by calling the Registrar's Office at 503-657-6958 ext. 2262.

Continued

6. Pay for Classes

Cashier's Office

503-657-6958, Ext. 2253

2002-2003 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 credits	\$41/credit	\$4/credit
15-18 credits	\$615	\$60
Above 18 credits	\$41/credit	\$4/credit
Out-of-state and international students (except California, Idaho, Nevada and Washington):		
1-15 credits	\$140/credit	\$4/credit
15-18 credits	\$2100	\$60
Above 18 credits	\$140/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 listing the "Course Fee" column in the credit course listing.

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

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

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 are an international student.

INTERNATIONAL STUDENT TUITION

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, you are eligible for a Gold Card entitling you to have your tuition waived for most CCC classes. Contact the Cashier's 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*. To obtain a Gold Card, contact your local Community School or stop by the Help Center in the Community Center.

Please 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 received 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.

Refund requests are processed via the official college Add/Drop request form or Telephone Registration System. Eligibility for a refund is determined by the date that your official request is received. Ceasing to attend class does not constitute an official drop. This refund policy is in effect for all classes, seminars and workshops. If you have questions, contact the Cashier's 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.

A Guide to Programs

ADVISING & COUNSELING CENTER 503-657-6958, Ext. 2213

Many programs of study are offered at Clackamas Community College. If you don't see your area of interest here, it still may be possible to pursue a program of study at CCC. Contact the Advising & Counseling Center if you have questions.

ASSOCIATE OF ARTS OREGON TRANSFER

Associate of Arts Oregon Transfer (AAOT) degrees are standardized two-year curriculums which guarantee junior standing for the purpose of registration upon admission to four-year state schools in Oregon. If you are seeking an AAOT you should work with 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 complete a bachelor's degree. See pages 26-44 for sample transfer curricula.

ASSOCIATE OF APPLIED SCIENCE

Preparatory professional/technical programs providing job skills and leading to an associate of applied science degree at Clackamas. We offer the following:

- Accounting
- Automotive Service Technology
- Building Construction Technology
- Business Technology
- Collision Repair Technology
- Computer-Aided Drafting/Computer-Aided Manufacturing (CAD/CAM)
- Computer Application Specialist
- Corrections
- Criminal Justice
- Drafting Technology
- eBusiness Administration
- Electronics Systems Technology*
- Emergency Management
- Horticulture
- Industrial Technology
- Manufacturing Technology
- Marketing & Management
- Microelectronics Systems Technology
- Network & Microcomputer Specialist
- Nursing
- Water & Environmental Technology

ACCELERATED DEGREE

The Accelerated Clackamas Degree program enables working adults to attend conveniently scheduled evening and weekend classes, and complete an AAOT or AAS degree in 18 months.

CERTIFICATE

Professional/technical programs providing job skills and leading to a certificate of completion at Clackamas. We offer the following:

- Accounting Clerk
- Building Construction Technology
- Business Management
- Collision Repair/Refinishing
- Computer Application Specialist
- Corrections/Juvenile
- Early Childhood Education & Family Studies
- eBusiness Administration
- Electronics Systems Technology*
- Emergency Medical Technician
- Gerontology
- Horticulture
- Instructional Assistant
- Manufacturing Technology
- Marketing
- Medical Assistant
- Microelectronics Systems Technology
- Network & Microcomputer Specialist
- Occupational Skills Training
- Office Assistant
- Practical Nursing
- Quality Control Technician
- Real Estate
- Supervisory Training
- Water & Environmental Technology

LICENSURE

Programs which prepare you for state license or certificate requirements, but do not lead to a degree or certificate from CCC. We offer the following:

- Income Tax
- Real Estate
- Pest Management/Pesticides

For more detailed information about specific degree requirements, see pages 18-24 or 46-50.

* *Pending official approval*

PROGRAM CODES:

Select the program name and code that is closest to your program of study at CCC. Write this code on your Application for Admission form in the space provided. If you need help choosing the proper code, please contact your academic advisor, counselor or faculty advisor.

Transfer Programs

Preparation for transfer to a four-year institution.
May lead to an Associate's Degree.

Accounting	AACT
Advertising	AADV
Agriculture	AAGR
Animal Sciences	AANS
Anthropology	AANT
Apparel Design/Merchandising Mgmt.	AADM
Architecture	AARC
Art	AART
Art History	AAH
Arts & Letters	AALT
Biochemistry/Biophysics	ABCP
Biology	ABIO
Business Administration	ABA
Chemistry	ACH
Child & Family Studies	ACFS
Chiropractic	ACHI
Communications/Speech	ASPE
Computer Science	ACS
Corrections	ACOR
Criminal Justice	ALEN
Dance	ADAN
Dental Hygiene	ADTH
Dentistry	ADT
Early Childhood Education	AECE
Economics	AEC
Education, Elementary	AEDE
Education, Secondary	AEDS
Education, Technology Education	AEDP
Engineering	AEN
English	AENG
Entomology	AENT
Environmental Health & Safety	AEHS
Environmental Science	AESC
Fisheries, Forestry or Wildlife Mgmt.	AFFW
Foreign Language	AFRL
Geography	AGG
Geology	AGL
Health Care Administration	AHEC
Health Education	AHED
History	AHST
Hospitality, Tourism & Recreation	AHTR
Housing Design/Int. Merchandising	AHID
Human Development/Family Services	AHDF
Interior Design	AID
International Studies	AIS
Journalism	AJ
Landscape Architecture	ALSA
Linguistics	ALIN
Mathematics	AMTH
Medicine	AMED
Microbiology	AMIC
Music	AMUS
Nursing	ANUR
Nutrition & Food Management	ANFM

Occupational Therapy	AOT
Optometry	AOPT
Pharmacy	APHC
Philosophy	APHL
Physical Education/Exercise Science	APHE
Physical Therapy	APT
Physics	APH
Political Science	APS
Psychology	APSY
Public Policy & Planning	APPP
Public Relations	APR
Religious Studies	ARS
Science	ASCI
Social Science	ASOS
Sociology	ASOC
Speech Communication	ASPE
Speech Therapy	ASPT
Technical Communication	ATC
Theatre Arts	ATA
Undecided	AUN
Urban Studies & Planning	AURB
Veterinary Medicine	AVET

Professional/Technical Programs

May lead to an Associate of Applied Science Degree.

Accounting	BBT
Automotive Service Technology	BAM
Building Construction Technology	BBC
Business Technology	BBU
Collision Repair Technology	BRR
Computer-Aided Drafting/Computer-Aided Manufacturing (CAD/CAM)	BCC
Computer Application Specialist	BCA
Corrections	BCO
Criminal Justice	BLE
Drafting Technology	BDR
Drafting Tech., Architectural Option	BDA
eBusiness Administration	BEBA
Electronics Systems Technology*	BEST
Emergency Management	BEM
Horticulture	BOH
Industrial Technology	BAP
Manufacturing Technology	BMT
Marketing & Management	BMK
Microelectronics Systems Technology	BME
Network & Microcomputer Specialist	BNM
Nursing	BNU
Water & Environmental Technology	BWT

Professional/Technical Programs

May lead to a Certificate of Completion.

Accounting Clerk	CAC
Building Construction Technology	CBU
Business Management	CBM
Collision Repair/Refinishing	CAR
Computer Application Specialist	CAP
Corrections/Juvenile	CCJ

Early Childhood Education	CEC
eBusiness Administration	CEBA
Electronics Systems Technology*	CEST
Emergency Medical Technician	CET
Gerontology, Housing Management	CGHO
Gerontology, Human Services Mgmt.	CGHU
Horticulture	COR
Instructional Assistant	CIA
Manufacturing Technology	CMF
Marketing	CMS
Medical Assistant	CMA
Microelectronics Systems Technology	CME
Network & Microcomputer Specialist	CMC
Occupational Skills Training	COST
Office Assistant	CCL
Practical Nursing	CPN
Quality Control Technician	CQC
Real Estate	CRE
Supervisory Training	CST
Water & Environmental Technology	CWQ

WorkFirst Training

Construction Specialist	KCS
Drywall & Carpet/Vinyl	KDCV
Manufacturing Specialist	KMP
Office Specialist	KOS
Production & Warehouse Specialist	KPWS
Public Safety Training Center	KPSTC
Semiconductor Operator	CSCO
Short Term Training, Other	KST
Water Quality Short School	KWSS

General Studies

Not designed for students planning to transfer to a four-year institution. May lead to an Associate's Degree.

General Studies	DGS
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High School Diploma

High School Diploma	EHS
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GED/ABE

GED/ABE	FGD
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Accelerated Clackamas Degrees

Business Administration	RABA
Drafting Technology	RBDR
Liberal Studies	RLS

Community Education

Community Education	HCE
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Transition Programs

Advanced College Credit	TACC
English as a Second Language	TESL
Life and Career Options	TLCO
Program for Intensive English	TIPE
Young Parent Opportunity Program	TYPO

* Pending official approval

CLACKAMAS COMMUNITY COLLEGE APPLICATION FOR ADMISSION



A Thank you for printing. Please use ink.

STUDENT ID #: _____

TODAY'S DATE: / / SOCIAL SECURITY NUMBER: _____

LAST NAME: FIRST NAME: MIDDLE INITIAL:

CURRENT ADDRESS NUMBER AND STREET: CITY: STATE: ZIP:

COUNTY: HOME PHONE: () WORK PHONE: () * DATE OF BIRTH: / /

ETHNICITY: AMERICAN INDIAN / ALASKA NATIVE ASIAN / PACIFIC ISLANDER GENDER: MALE FEMALE PREVIOUS NAME(S):

BLACK / NON-HISPANIC HISPANIC WHITE / NON-HISPANIC

I AM ENROLLING FOR: FALL WINTER SPRING SUMMER 20__ (SEE FACING PAGE) ♦PROGRAM CODE: DO YOU PLAN TO EARN A DEGREE OR CERTIFICATE AT CCC?: Yes No

REASON YOU'RE ATTENDING THIS TERM: TRANSFER CLASSES LEARN JOB SKILLS UPDATE JOB SKILLS HS/GED EXPLORE CAREER/ACADEMICS READING/WRITING/MATH SKILLS LEARN ENGLISH LANGUAGE PERSONAL INTEREST OTHER:

I AM: US CITIZEN RESIDING IN OR, CA, ID, WA, NV FOR THE PAST 90 DAYS OR, AN IMMIGRANT REFUGEE OTHER

I AM: US CITIZEN RESIDING OUTSIDE OF OR, CA, ID, WA, NV INTERNATIONAL STUDENT INTERNATIONAL VISITOR COUNTRY OF CITIZENSHIP _____

IN CASE OF EMERGENCY, NOTIFY LAST NAME: FIRST NAME: PHONE: ()

Providing your Social Security number is voluntary. If you provide it, the college will use your Social Security number for keeping records, doing research, aggregate reporting, extending credit and collecting debts. Your Social Security number will not be given to the general public. If you choose not to provide your Social Security number, you will not be denied any rights as a student. Please 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 use of the number in the manner described.

* If you're under 18, additional permissions are required before you can register for classes.

♦ You must select a degree or vocational certificate program in order to be eligible for financial aid.

B I AM: 1. EMPLOYED 35 HRS/WEEK OR MORE EMPLOYED LESS THAN 35 HRS/WEEK RETIRED NOT EMPLOYED
2. USING VETERANS BENEFITS

HIGH SCHOOL COMPLETION: STILL IN HIGH SCHOOL CIM PROFICIENCY EXAM HOME SCHOOLING DID NOT COMPLETE ATTENDANCE COMPLETION HIGH SCHOOL DIPLOMA CAM GED HS DIPLOMA FROM A COMMUNITY COLLEGE EXTERNAL DIPLOMA PROGRAM

LAST HIGH SCHOOL / GED CENTER ATTENDED SCHOOL: YEAR: STATE: DID YOU GRADUATE?: No Yes DATE:

PREVIOUS COLLEGES ATTENDED SCHOOL: YEAR: STATE: DEGREE OR CERT EARNED:

SCHOOL: YEAR: STATE: DEGREE OR CERT EARNED:

SCHOOL: YEAR: STATE: DEGREE OR CERT EARNED:

Please complete this section if information you supplied previously has changed. Information in this section is used for educational planning, maintaining records, and providing support services. The privacy of your records is protected (see the Student Handbook). We appreciate your voluntary response.

C I AM THE FIRST PERSON IN MY FAMILY TO ATTEND COLLEGE: YES NO HOUSEHOLD INCOME: \$0 - \$15,000 \$15,000 - \$30,000 \$30,000 - 50,000 \$50,000 +

This section for statistical purposes only.

CCC releases "directory information" regarding students which includes enrollment status, verification of certificate or degree award, residency status, major and athletic participation. If you do not want directory information released, please contact the Registrar's Office and request the Restrict Release of Directory Information form.

Admission Policy Statement

Clackamas Community College supports an open door policy, welcoming all students who can benefit from the instruction offered, regardless of their education background. Admission to the College does not guarantee admission to all programs. Student seeking entry to special admit programs must meet a variety of criteria.

I certify that all statements on this application are complete and true. I understand I will be subject to standards of academic progress.

Signature: _____ Date: _____

Direct your application to:
Clackamas Community College, Registrar, 19600 South Molalla Avenue, Oregon City, OR 97045-7998
503-657-6958, ext. 2263 · TTY/TDD 503-650-6649 · FAX 503-722-5864

REVISED 4/2002

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

Transfer Information

Take Your First Two Years at Clackamas

Transfer programs at Clackamas Community College fulfill lower division college credits which can be applied toward a bachelor's degree at a four-year college. CCC's transfer courses can be used to:

- meet requirements for an Associate of Arts Oregon Transfer degree (AAOT) (especially helpful for students who plan to transfer to a state university in Oregon).
- meet specific lower division credit requirements for the four-year college or degree program of your choice.

Suggested courses for 75 programs of study available at Oregon University System (OUS) schools are listed on pages 26-44. This section contains *sample transfer curricula* for those planning to transfer to a four-year university. Please see specific AAOT degree requirements on this page, and consult the catalog of the college you plan to attend for the major requirements of that institution. If your intended program of study is not included, please see your faculty advisor or a staff member in the Advising & Counseling Center for recommended courses.

The degree requirements in this catalog are valid for five years following the summer term of 2002. When you are ready to graduate, you may choose to meet the requirements of either the catalog current during the first term you attended CCC, or the most current catalog at the time you graduate.

Undecided About Your Program of Study?

Select from the following for a good start in any program of study. Determine how many courses you want to take for the term, then choose specific courses from the lists on page 22. Work with your faculty advisor or a staff member in the Advising & Counseling Center to develop a schedule for subsequent terms.

Course	Credits
Writing* (WR-080, WR-090, WR-095 or WR-121)	3
Math* (MTH-020, MTH-060, MTH-065, MTH-095, etc.)	4
Humanities or Arts course	3
HPE-295 or HE-250 or 3 terms of PE-185 (different activities)	3
Social Science course	3
Lab Science course	4
Career Exploration courses (CWE-010, CWE-100, HD-140)	2-6
Elective in an area of interest	3
Computer Literacy class (if necessary)	

*depends on placement score

See pages 26-44 for Sample Transfer Curricula. Work with 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 college where you plan to complete a bachelor's degree.

Oregon Transfer Associate of Arts Degree

LOWER DIVISION COLLEGE TRANSFER

Designed for the student who plans to transfer to a four-year state university and earn a bachelor's degree. For specific programs of study, refer to the "sample transfer curricula" in this catalog and see your faculty advisor or a staff member in the Advising & Counseling Center.

The AAOT degree is a standardized, two-year curriculum designed to facilitate transfer from a community college to a state university. CCC students holding an AAOT degree 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 institution. These institutions 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.

REQUIREMENTS

- Complete a minimum of 90 transfer credits with a cumulative GPA of 2.0 or above. At least 24 credits must be taken in residence at CCC (CPL credit does not satisfy this requirement).
- Complete nine credits of English Composition (WR-121, WR-122, WR-123 or WR-227) with a minimum letter grade of C.
- Complete four credits of Math (MTH-105 or MTH-111 or higher) with a minimum letter grade of C. Elementary Education majors may take MTH-211, MTH-121, MTH-213 as their math requirement.
- Complete three credits of Speech (SP-111) with a minimum letter grade of C.
- Foreign language requirements vary depending on date of high school graduation and four-year university entrance requirements. Check with the transfer school or the CCC Advising & Counseling Center.
- Complete one Arts & Letters sequence.
- Complete one Social Science sequence.
- Complete one Lab Science sequence.
- Satisfy the Computer Literacy Requirement (see page 20).
- Complete additional Arts & Letters courses with a prefix different from the Arts & Letters sequence completed.
- Complete additional Social Science courses with a prefix different from the Social Science sequence completed.
- Complete additional Math/Science/Computer Science courses with a prefix different from the Lab Science sequence completed.
- Complete three credits of PE-185 (different activities) or HE-250 or HPE-295. (Students who have completed six months of active military service with a copy of their discharge papers, form DD-214, do not have to complete the physical education requirements).

Note: Course, class standing, or GPA requirements for specific majors, departments, or schools are not necessarily satisfied by the AAOT degree.

Associate of General Studies

Designed for the student seeking a more flexible degree program that can be completed in two years. If you are considering a four-year degree, it is recommended that you meet with an advisor to see whether the AAOT or General Studies degree is more appropriate.

REQUIREMENTS

- Complete a minimum of 90 credits with a cumulative GPA of 2.0 or above. At least 24 credits must be taken in residence at CCC (CPL credit does not satisfy this requirement).
- Complete 24 credits of coursework having the same letter prefix or within the same department.
- Complete a minimum of 18 General Education credits to include communication, computation, computer literacy, human relations and physical education/health (see *Required Areas of Concentration for General Education Requirements*, page 48).

For more information contact the Advising & Counseling Center, ext. 2213.

Earning Multiple Degrees/Certificates

You may earn:

- One Associate of Arts Oregon Transfer degree (AAOT)
- One Associate of General Studies
- One or more Associate of Applied Science (Professional/Technical) degrees
- One or more Certificates of Completion

To earn more than one degree/certificate you must:

- file a separate petition for each degree/certificate
- satisfy the requirements for each program of study
- satisfy all other institutional requirements

For more information contact the Advising & Counseling Center, ext. 2213.

Accelerated Clackamas Degrees

AAOT—BUSINESS ADMINISTRATION
AAOT—LIBERAL STUDIES
EXT. 2214/2157

Accelerated degrees provide a way for adult learners to balance the complex commitments of work and family while getting their college education. Highly motivated adults with five years of work experience commit to a six term program of evening and weekend classes. Students become part of a group focusing on adult learning styles, with group discussions and projects applied to current work situations.

This package for working adults includes:

- Classes one night a week and seven or eight Saturdays a term
- Associate degree in six terms
- Small group projects
- Small courses with personal attention
- Courses in writing, computers, speaking, math and human relations

Program goals focus on critical thinking, computer applications, team concepts, presentation skills, situation problem solving, project management, ethics and contemporary business practices.

This program requires a special admission process. For more information, contact Theresa Tuffli, ext. 2214, or Margie Gibler, ext. 2157.

Note: Suggested programs of study may contain courses with prerequisites. Check course descriptions.

ACCELERATED DRAFTING TECHNOLOGY COURSE OFFERINGS

Accelerated Drafting Technology courses are designed to assist professional drafters in the completion of the Associate of Applied Science degree in Drafting Technology. To apply, at least three years of practical drafting experience is required in one or more drafting fields. Practical experience plays a major role in determining the duration of the training. Courses are offered in an accelerated, proficiency-based format and 95 credits are required for this degree program. Students are responsible for completing their general education course requirements in the traditional format. For more information, contact the Drafting Technology department, ext. 2379.

Computer Literacy Requirements

ALL DEGREE AND CERTIFICATE PROGRAMS

You must satisfy CCC's computer literacy requirements in order to receive a degree or certificate of completion. The requirement may be satisfied by:

- 1) passing a computer literacy examination (check with Testing/Assessment, ext. 2269).
- OR
- 2) enrolling in and passing one of the classes listed below.

COURSES WHICH MEET THE COMPUTER LITERACY REQUIREMENT:

ART-225	Computer Graphics I [C]
ART-226	Computer Graphics II [C]
ART-227	Computer Graphics III [C]
BA-131	Introduction to Business Computing [C]
BA-205	Solving Communication Problems with Technology [C]
BC-100	Construction Orientation: Overview of Construction Industry [C]
BC-107	Construction Career Portfolio [C]
BC-112	Construction Specification Fundamental Practices [C]
BC-121	Professional Computing for Construction [C]
BC-201	Project Management I: Developing Project Expectations [C]
BC-202	Project Management II: Managing Project Expectations [C]
BC-203	Project Management III: Evaluating Project Expectations [C]
BC-210	Construction Project Model Development [C]
BT-120	Personal Keyboarding [C]
BT-150	WordPerfect for Windows [C]
BT-160	MS Word for Windows [C]
BT-161	Intermediate Microsoft Word [C]
BT-170	Access [C]
BT-176	Excel for Windows [C]
BT-262	Advanced Microsoft Word [C]
CDT-104	Professional Computing Basics [C]
CS-091	Computers for New Users II [C]
CS-120	Survey of Computing [C]
CS-121	Computer Applications [C]
CS-161	Computer Science I [C]
HOR-222	Horticultural Computer Applications [C]
HUM-170	Metamorphoses [C]
HUM-171	Metamorphoses [C]
HUM-172	Metamorphoses [C]
J-215	Publications Lab [C]
J-216	Reporting [C]
J-218	Editing & Design [C]
J-226	Electronic Newspaper Production [C]
MFG-109	Computer Literacy for Technicians [C]
MFG-209	Advanced Computer Skills for Manufacturing [C]
MUS-101L	MIDI Lab [C]
MUS-102L	MIDI Lab [C]
MUS-103L	MIDI Lab [C]
MUS-105	Music Appreciation [C]
MUS-111L	MIDI Lab [C]
MUS-112L	MIDI Lab [C]
MUS-113L	MIDI Lab [C]
MUS-120	Finale I [C]
MUS-121	Finale II [C]
MUS-122	Finale III [C]
MUS-124	Jazz Arranging/Finale [C]
MUS-143	MIDI Sequencing [C]
MUS-211L	MIDI Lab [C]

MUS-212L	MIDI Lab [C]
MUS-213L	MIDI Lab [C]
SKH-030	Computer Access I [C]
SKH-035	Computer Access II [C]
SP-111*	Public Speaking
SSC-150	The Columbia Basin [C]
SSC-151	The Columbia Basin [C]
SSC-152	The Columbia Basin [C]
SSC-160	Faith & Reason [C]
SSC-161	Faith & Reason [C]
SSC-162	Faith & Reason [C]
WR-121*	English Composition
WR-122*	English Composition
WR-165	Writing on the Web [C]
WR-227	Technical Report Writing [C]
WR-246	Editing & Publishing [C]

*Certain sections only meet the computer literacy requirements.

Additional Courses

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

ARTS & LETTERS COURSES

Select any course from Arts & Letters Sequences plus:

ART	Art
* GER, SPN, Foreign Language (second year)	
FR, JPN	
HUM	Humanities (except HUM-100)
J	Journalism
ENG, WR	Literature (includes ENG-116 & WR-241-247)
MUP, MUS	Music
PHL	Philosophy
R	Religious Studies
SP	Speech (courses numbered SP-112 and above)
TA	Theatre Arts

SOCIAL SCIENCE COURSES

Select any course from Social Science Sequences plus:

ANT	Anthropology
EC	Economics
GEO	Geography
HST	History
PS	Political Science
PSY	Psychology (except PSY-142)
SOC	Sociology
SSC	Social Science Inquiry
WS	Women's Studies

SCIENCE, MATH, COMPUTER SCIENCE COURSES

Select any course from Science Sequences plus:

Computer Science

CS courses numbered 100 and above

Math

MTH courses numbered 105 and above, except 199, 280 or 299

Science

GE (Engineering)

Courses with prefixes BI, BOT, CH, ESR, G, GS and Z numbered 100 and above

* indicates course sequences which *must* be taken in order

Please 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 be recommended. See course description.

Courses Which Do Not Transfer

Many CCC courses carry college transfer credit and, when transferred to a four-year institution, will normally apply toward higher degrees.

The following courses will *not* transfer:

- courses with one- or two-digit course numbers, or which begin with “0”
- courses with the following prefixes:

ASE	GR	SBM
CW	MM	SKH
GED	PIE	SKO

Please note: Not all courses at CCC will transfer to a four-year institution as part of an AAOT. 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.

See the Advising & Counseling Center for more information on:

- up-to-date curriculum changes and career opportunities
- current class information, including times, days, locations, instructors, fees, and how to register
- admissions information and specific requirements for all Oregon public and private universities

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

Student Planner 2002-2003*For advising purposes only—refer to the catalog for complete requirements.*

	Requirements	Courses
	<i>Writing (9 credits)</i>	WR 121, 122, 123 or 227 (Must have "C" grade or better)
	<i>Oral Communication/Rhetoric (3 credits)</i>	SP 111 (Must have "C" grade or better)
	<i>Mathematics (4 credits)</i>	MTH 105, 111 or higher or MTH 211, 212, 213 sequence excluding MTH 199, 280, 299 (Must have "C" grade or better)
	<i>Health & Physical Education (3 credits)</i>	HPE 295, HE 250, or 3 courses of PE 185 (different levels/activities)
MUST EQUAL A COMBINED MINIMUM OF 10 CREDITS	<i>Arts & Letters Sequence</i>	ART 115, 116, 117 ART 131, 132, 133 ART 204, 205, 206 ART 211, 212, 213 ENG 104, 105, 106 ENG 107, 108, 109 ENG 201, 202, 203 ENG 204, 205, 206 ENG 250, 251, 252 ENG 253, 254, 255 *ASL 201, 202, 203 *FR 201, 202, 203 *GER 201, 202, 203 *JPN 201, 202, 203 *SPN 201, 202, 203 HUM 170, 171, 172 HUM 220 – 234 (any 3) *MUS 111, 112, 113 MUS 201–203, 205, 206 (any 3) PHL 101, 102, 103, 205, 210, 213, 215 (any 3) R 101, 102, 103 R 204, 205, 206 R 207, 208, 209 SP 112, 126 or 219 SP 211, 218 or 219 TA 101, 102, 103 TA 141, 142, 143 TA 211, 212, 213 TA 241, 242, 243
	<i>Arts & Letters Additional Requirements</i>	Select any course with a prefix of: *ASL, FR, GER, JPN, SPN (second year only) ART, ENG, HUM (except HUM 100), J, MUP, MUS, PHL, R, SP (courses numbered SP 112 and above), TA, WR (241-247 only)
MUST EQUAL A COMBINED MINIMUM OF 15 CREDITS	<i>Social Science Sequence</i>	ANT 101, 102, 103 ANT 230, 231, 232 EC 201, 202 EC 215, 216, 230 GEO 100, 110, 130, 230 (any 3) HST 101, 102, 103 HST 201, 202, 203 HST 204, 205, 206 HST 238, 239, 240 PS 201, 202, 203, 204, 205, 206, 225 (any 3) PSY 200, 205 & 218 or 219 SOC 204, 205, 206 SSC 160, 161, 162, 220-234 (any 3)
	<i>Social Science Additional Requirements</i> (Prefixes different from Sequence)	Select any course with a prefix of: ANT, EC, GEO, HST, PS, PSY (except PSY 142), SOC, SSC, WS
MUST EQUAL A COMBINED MINIMUM OF 15 CREDITS	<i>Lab Science Sequence</i>	* ASC 200, 201, 202 GS 104, 105, 106 or 107 * BI 101, 102, 103 * BI 211, 212, 213 * BI 231, 232, 233 BOT 201, 202, 203 * CH 104, 105, 106 * CH 121, 122, 123 * CH 221, 222, 223 * CH 241, 242, 243 ESR 171, 172, 173 G 101, 102, 103 G 201, 202, 203 PH 121, 122, 123 * PH 201, 202, 203 * PH 211, 212, 213 Z 201, 202, 203
	<i>Other Science/Math/Computer Science Selections</i>	Select any course (numbered 100 and above) with a prefix of: CS, MTH (except 199, 280 or 299) and BI, BOT, CH, ESR, G, GE, GS, and Z
	<i>Computer Literacy</i>	See list in the Clackamas Community College catalog
	<i>Elective Courses</i> To total at least 90 credits	Up to 12 credits of professional/technical may be used if the courses are part of an approved professional/technical program

* Indicates course sequences which must be taken in order.

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 be recommended. See course descriptions.

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE
Student Planner Worksheet 2002-2003

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 & 123 or 227 (Must complete with a "C" grade or better)	9				
<i>Oral Communications/Rhetoric</i> SP 111 (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> Choose from HPE 295, HE 250, or 3 courses of PE 185 (different levels/activities)	3				
<i>Arts & Letters</i> Select a minimum of 10 credits from at least two disciplines. Must include a sequence and additional courses must be from a different prefix	<i>Minimum of 10 credits</i>				
<i>Social Science</i> Select a minimum of 15 credits from at least two disciplines. Must include a sequence and additional courses must be from a different prefix	<i>Minimum of 15 credits</i>				
<i>Science/Math/Computer Science</i> Select a minimum of 15 credits including a laboratory course sequence of at least 12 credits in biological or physical sciences.	<i>Minimum of 15 credits</i>				
<i>Computer Literacy</i>	—				
<i>Additional Courses</i> To total at least 90 credits (Up to 12 credits of professional/technical may be used)					
<i>Note: All courses must be 100 level or higher</i>	TOTALS				

- Complete a minimum of 90 credits
 Completion of at least 24 credits at CCC

- Establish cumulative GPA of 2.0 or above
 Satisfy the 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.

How to Use the Student Planner Worksheet:

You earn the Associate of Arts Oregon Transfer Degree (AAOT) by completing all the courses indicated on the Student Planner, which must total a minimum of 90 credits of 100 level or higher courses with a GPA of 2.00 or higher. You may transfer up to 108 credits to any institution in the Oregon University System (OUS). Transfer requirements vary at private or out-of-state institutions.

Plan your courses by filling out the worksheet as follows:

Writing

All AAOT student must complete WR-121, -122 and either WR-123 or -227.

Oral Communications/Rhetoric

All AAOT students must complete SP-111. This course may also be used as part of the required Arts & Letters Sequence.

Mathematics

Choose MTH-105, MTH-111 or higher numbered MTH course. The sequence MTH-211, -212, -213 also meets the mathematics requirement (elementary education majors).

Health and Physical Education

Choose from HPE-295, HE-250, or three courses of PE-185 (must be different levels or activities).

Arts & Letters Sequence

Choose a Arts & Letters sequence of three related courses from the list on page 22.

Arts & Letters Additional Requirements

Choose any Arts & Letters course(s) with a prefix different from the sequence. If SP courses were chosen as the sequence, choose at least six credits of Arts & Letters courses that are not SP.

Social Science Sequence

Choose a Social Science sequence of three related courses from the list on page 22.

Social Science Additional Requirements

Choose any Social Science course(s) with a prefix different from the sequence.

Lab Science Sequence

Choose any Lab Science sequence from the list on page 22.

Additional Science/Math/Computer Science Requirements

Choose Science, Math or Computer Science course(s) with a prefix different from the sequence.

Computer Literacy

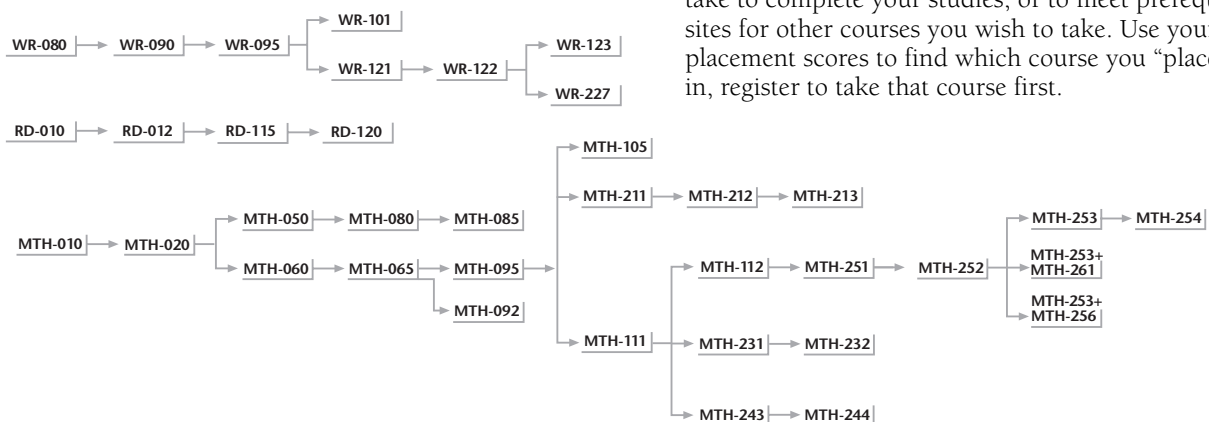
All students must demonstrate computer literacy by completing one of the computer literacy courses listed on page 20, or by passing the Computer Literacy exam available in the Testing Center, ext. 2269.

Major and Elective Courses

This category includes any other transferable college courses that you choose either because it applies toward your intended major, or because it is helpful or interesting to you. Depending on your choices in the other areas, anywhere from 24-41 credits may be needed in this category. Up to 12 credits of professional/technical courses may be used.

Use the Student Planner Worksheet to complete a term-by-term Educational Plan with an Academic Advisor. Educational Plan worksheets are available in the Advising & Counseling Center, CC 120.

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.

Sample Transfer Curricula

The sample transfer curricula on the following pages indicate programs of study that prepare students for bachelors' degrees at four-year institutions. 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 complete a bachelor's degree.

Accounting	26	Health Care Administration	35
Advertising	26	Health Education	35
Agriculture	26	History	35
Animal Sciences	26	Horticulture	36
Anthropology	26	Hospitality, Tourism & Recreation	36
Apparel Design/Merchandising Management	27	Housing Design/Interior Merchandising	36
Architecture	27	Human Development/Family Services	36
Art	27	Interior Design	37
Art History	27	International Studies	37
Arts & Letters	28	Journalism	37
Biochemistry/Biophysics	28	Landscape Architecture	37
Biology	28	Liberal Studies	38
Business Administration	28	Mathematics	38
Business Administration (Accelerated Degree)	29	Medicine	38
Chemistry	29	Microbiology	39
Child & Family Studies	29	Music	39
Chiropractic	29	Nursing	39
Communications/Speech	30	Nutrition & Food Management	39
Computer Science	30	Occupational Therapy	40
Corrections	30	Optometry	40
Criminal Justice	30	Pharmacy	40
Dance	31	Philosophy	40
Dental Hygiene	31	Physical Education/Exercise Science	41
Dentistry	31	Physical Therapy	41
Early Childhood Education	31	Physics	41
Economics	32	Political Science	41
Education, Elementary	32	Psychology	42
Education, Secondary	32	Public Relations	42
Education, Technology Education	32	Religious Studies	42
Engineering	33	Science	42
English	33	Social Science	43
Entomology	33	Sociology	43
Environmental Health & Safety	33	Speech/Communication	43
Environmental Science	34	Speech Therapy	43
Fisheries/Forestry/Wildlife Management	34	Theatre Arts	43
Foreign Language	34	Urban Studies & Planning	44
Geography	34	Veterinary Medicine	44
Geology	35	Transfer & Articulation Agreements	44

Please note:

90 credits are required for an associate's degree; some transfer programs suggest more credits. For more information about transfer course sequences, see page 22-24. Transfer requirements may vary at private or out-of-state institutions. For course descriptions, see pages 77-160.

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

Accounting

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

A program of study in accounting prepares a student for a position in public, private or government accounting, and it provides preparation for the CPA (Certified Public Accountant) or the CMA (Certified Management Accountant) exams.

Contact John Olds, ext. 2408, Joan Ryan, ext. 2363, or the Advising & Counseling Center, ext. 2213.

Required courses for AAOT Degree *credits*

WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-111 College Algebra	4

Suggested courses to meet additional AAOT requirements

Arts & Letters Sequence	9
PHL-102 Ethics	3
EC-201/202 Principles of Economics	8
PS-201/202 U.S. Government	6
ANT, PSY or SOC Course	3-4
Lab Science Sequence	12
MTH-243/244 Introduction to Probability & Statistics	8
BA-101 Introduction to Business	4
BA-131 Introduction to Business Computing [C]	4
BA-211 Financial Accounting I	4
BA-212 Financial Accounting II	4
BA-213 Decision Making with Accounting Information	4
BA-205 Solving Communication Problems with Technology [C]	4
BA-226 Business Law I	4

Total: 96-97

Note: A minimum of 90 credits is required for an AAOT degree.

Advertising

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

Contact Dale Hatfield, ext. 2361, or the Advising & Counseling Center, ext. 2213.

Required courses for AAOT degree *credits*

WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-111 College Algebra	4

Suggested courses to meet additional AAOT requirements

Arts & Letters Sequence	9
Arts & Letters course (prefix different from prefix)	3
EC-201/202 Principles of Economics	8
Social Science Courses (prefix different from sequence)	9
Lab Science Sequence	12
MTH-243/244 Introduction to Probability & Statistics	8
BA-101 Introduction to Business	4
BA-131 Introduction to Business Computing [C]	4
BA-211/212/213 Accounting Sequence	12
BA-205 Solving Communication Problems w/Technology [C]	4
BA-226 Introduction to Business Law I	4

Total: 96

Note: A minimum of 90 credits is required for an AAOT degree.

Agriculture

ONE-YEAR TRANSFER CURRICULUM

Students in this program of study should complete only their freshman year at Clackamas Community College because specialized lower division courses are not available. However, see course descriptions for horticulture courses which transfer to Oregon State University.

Contact Elizabeth Howley, ext. 2389, or the Advising & Counseling Center, ext. 2213.

Suggested courses *credits*

WR-121/122 English Composition	6
SP-111 Public Speaking	3
MTH-111 College Algebra	4
Arts & Letters Sequence	9
EC-201/202 Principles of Economics	8
CH-104/105/106 Introductory Chemistry	15

Total: 45

Animal Sciences

ONE-YEAR TRANSFER CURRICULUM

Students in this program of study should complete only their freshman year at Clackamas Community College because specialized lower division courses are not available.

Contact Dave Arter, ext. 2210, or the Advising & Counseling Center, ext. 2213.

Suggested courses *credits*

WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-111 College Algebra	4
Arts & Letters Sequence	9
CH-121/122/123 Introductory College Chemistry or CH-221/222/223 General Chemistry	15
EC-201/202 Principles of Economics	8

Total: 51

Anthropology

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

A program of study in anthropology prepares a student to work for public social agencies and for other careers open to liberal arts graduates, as well as teach high school social studies. Jobs in museums, college teaching and field work require graduate degrees.

Contact Eric Lewis, ext. 2251, or the Advising & Counseling Center, ext. 2213.

Required courses for AAOT degree *credits*

WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-111 College Algebra or MTH-105 Introduction to Contemporary Mathematics	4

Suggested courses to meet additional AAOT requirements

ENG-104/105/106 Introduction to Literature	9
ART-204/205/206 History of Western Art	9
ANT-101/102/103 Anthropology	12
PSY-200/205/219 Psychology	9
BI-101/102/103 General Biology	12
CS-120 Survey of Computing [C]	4
CS-121 Computer Applications [C]	3
G-201/202/203 General Geology	12
GEO-100/110/130 Geography	9
<i>Total:</i>	98

Note: A minimum of 90 credits is required for an AAOT degree.

Apparel Design/ Merchandising Management

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

Contact ext. 2527, or the Advising & Counseling Center, ext. 2213.

<i>Required courses for AAOT degree</i>	<i>credits</i>
WR-121/122/123 or 227 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-111 College Algebra	4

Suggested courses to meet additional AAOT requirements

Arts & Letters Sequence	9
Arts & Letters Course (prefix different from sequence)	3
Social Science Sequence	8-9
Social Science Courses (prefixes different from sequence)	6
Lab Science Sequence	12-15
Additional Science or Math Courses	3
CS-120 Survey of Computing [C]	4
Electives	29-31
<i>Total:</i>	93-99

Note: A minimum of 90 credits is required for an AAOT degree.

Architecture

**PRE-PROFESSIONAL PROGRAM
SUGGESTED TRANSFER CURRICULUM**

Since architecture has specific requirements, the Oregon Transfer Degree is not recommended for this major. However, ask about the Architectural Option in the Drafting Technology degree.

Contact Terence Shumaker, ext. 2365, or the Advising & Counseling Center, ext. 2213.

<i>Suggested courses</i>	<i>credits</i>
WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-112 Trigonometry/Pre-calculus	4
ART-204/205/206 History of Western Art	9
ART-115/116/117 Basic Design	9
Social Science Sequence	8-9
Social Science Courses (prefix different from sequence)	9
PH-201/202/203 General Physics	15
CDT-104 Professional Computing Basics [C] or CAD-151 AutoCAD Level I	2-4
Electives	22
<i>Total:</i>	93-96

Art

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

A program of study in art prepares a student to work in museums, galleries, and related business, and pursue research and creative projects, as well as teach in school and community programs.

Contact Rick True, ext. 2541, or the Advising & Counseling Center, ext. 2213.

<i>Required courses for AAOT degree</i>	<i>credits</i>
WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-111 College Algebra or MTH-105 Introduction to Contemporary Mathematics	4

Suggested courses to meet additional AAOT requirements

ART-204/205/206 History of Western Art	9
Arts & Letters Course (prefix different from sequence)	6
Social Science Sequence	8-12
Social Science Courses (prefix different from sequence)	9
Lab Science Sequence	12
CS-120 Survey of Computing [C]	4
ART-115/116/117 Basic Design	9
ART-131/132/133 Drawing	9
Electives (studio art courses recommended)	8
<i>Total:</i>	93-97

Note: A minimum of 90 credits is required for an AAOT degree.

Art History

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

Contact Rick True, ext. 2541, or the Advising & Counseling Center, ext. 2213.

<i>Required courses for AAOT degree</i>	<i>credits</i>
WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-111 College Algebra or MTH-105 Introduction to Contemporary Mathematics	4

Suggested courses to meet additional AAOT requirements

ART-204/205/206 History of Western Art	9
ENG-107/108/109 World Literature	6
HST-101/102/103 History of Western Civilization	12
Social Science Courses (prefix different from sequence)	9
Lab Science Sequence	12
CS-120 Survey of Computing [C]	4
ART-115/116/117 Basic Design	9
ART-131/132/133 Drawing	9
Electives (studio art courses recommended)	7
<i>Total:</i>	96

Note: A minimum of 90 credits is required for an AAOT degree.

Arts & Letters

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

A program of study in arts & letters is an excellent foundation for graduate work in specialized areas or employment which demands interpretive reading, writing and research skills.

Contact Emily Orlando, ext. 2372, or the Advising & Counseling Center, ext. 2213.

Required courses for AAOT degree

	<i>credits</i>
WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-111 College Algebra or MTH-105 Introduction to Contemporary Mathematics	4

Suggested courses to meet additional AAOT requirements

ENG-104/105/106 Introduction to Literature or ENG-107/108/109 Introduction to World Literature	9
Arts & Letters Courses	9
HST-101/102/103 History of Western Civilization	12
Social Science Courses (prefix different from sequence)	9
Lab Science Sequence	12
CS-120 Survey of Computing [C]	4
Foreign Language Sequence (second year)	12
Electives (200 level literature courses recommended)	12
<i>Total:</i>	98

Note: A minimum of 90 credits is required for an AAOT degree.

Biochemistry/Biophysics

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

A program of study in biochemistry/biophysics prepares a student for inspection, testing, technical sales and lab work, careers with government regulatory agencies, and graduate work in medicine, dentistry and veterinary medicine.

Contact Dave Arter, ext. 2210, or the Advising & Counseling Center, ext. 2213.

Required courses for AAOT degree

	<i>credits</i>
WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-251 Calculus with Analytic Geometry	5

Suggested courses to meet additional AAOT requirements

Arts & Letters Sequence	9
Arts & Letters Course (prefix different from sequence)	3
Social Science Sequence	8-9
Social Science Courses (prefix different from sequence)	8-12
MTH-252/253 Calculus with Analytic Geometry	10
CH-221/222/223 General Chemistry	15
CH-241/242/243 Organic Chemistry	12
BI-211/212/213 Biology	15
PH-211/212/213 Physics with Calculus	15
<i>Total:</i>	115-120

Note: A minimum of 90 credits is required for an AAOT degree.

Biology

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

A program of study in biology prepares a student for teaching, testing, technical sales, lab work and careers with government regulatory agencies.

Contact Dave Arter, ext. 2210, or the Advising & Counseling Center, ext. 2213.

Required courses for AAOT degree

	<i>credits</i>
WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-251 Calculus with Analytic Geometry	5

Suggested courses to meet additional AAOT requirements

Arts & Letters Sequence	9
Arts & Letters Course (prefix different from sequence)	6
Social Science Sequence	8-12
Social Science Courses (prefix different from sequence)	6
MTH-252 Calculus with Analytic Geometry	5
CH-221/222/223 General Chemistry	15
BI-211/212/213 Biology	15
PH-201/202/203 General Physics	15
<i>Total:</i>	99-103

Note: A minimum of 90 credits is required for an AAOT degree.

Business Administration

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

A program of study in business administration prepares a student for office and personnel administration, banking, insurance and retailing, selling, merchandising and teaching.

Contact John Olds, ext. 2408, Joan Ryan, ext. 2363, or the Advising & Counseling Center, ext. 2213.

Required courses for AAOT degree

	<i>credits</i>
WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-111 College Algebra	4

Suggested courses to meet additional AAOT requirements

Arts & Letters Sequence	9
Arts & Letters Course (prefix different from sequence)	3
EC-201/202 Principles of Economics	8
Social Science Courses (prefix different from sequence)	9
Lab Science Sequence	12
MTH-243/244 Introduction to Probability & Statistics	8
BA-101 Introduction to Business	4
BA-131 Introduction to Business Computing [C]	4
BA-211 Financial Accounting I	4
BA-212 Financial Accounting II	4
BA-213 Decision Making with Accounting Information	4
BA-205 Solving Communication Problems with Technology [C]	4
BA-226 Introduction to Business Law I	4
<i>Total:</i>	96

Note: A minimum of 90 credits is required for an AAOT degree.

Business Administration

ACCELERATED DEGREE
ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

Students who complete the program below may transfer credits to Portland State University (with junior standing) or other four-year Oregon universities. A bachelor's degree in business administration prepares a student for office and personnel administration, banking, insurance and retailing, selling, merchandising and teaching.

Special admission process required. Contact Theresa Tuffli, ext. 2214, or the Advising & Counseling Center, ext. 2213.

<i>Required courses for AAOT degree</i>	<i>credits</i>
WR-121/122/123 English Composition	9
HE-250 Personal Health	3
SP-111 Public Speaking	3
MTH-111 College Algebra	4

Suggested courses to meet additional AAOT requirements

Humanities Inquiry Sequence	9
SP-112 Persuasive Speaking	3
Social Science Inquiry Sequence	9
EC-201/202 Principles of Economics	8
ASC-200 Natural Science Inquiry	4
ASC-201 Integrated Science Concepts	4
ASC-202 Integrated Science Concepts	4
MTH-243 Probability & Statistics	4
MTH-244 Statistics	4
BA-101 Introduction to Business	4
BA-131 Introduction to Business Computing [C]	4
BA-205 Solving Communication Problems with Technology [C]	4
BA-206 Management Fundamentals	4
BA-211 Financial Accounting I	4
BA-212 Financial Accounting II	4
BA-213 Decision Making with Accounting Information	4
Total:	96

Note: A minimum of 90 credits is required for an AAOT degree.

Chemistry

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

A bachelor's degree in chemistry prepares a student for teaching, government and industry laboratory jobs in a wide variety of fields as well as graduate work in pharmacy, medicine, oceanography and environmental science.

Contact Dave Arter, ext. 2210, or the Advising & Counseling Center, ext. 2213.

<i>Required courses for AAOT degree</i>	<i>credits</i>
WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-251 Calculus with Analytic Geometry	5

Suggested courses to meet additional AAOT requirements

Arts & Letters Sequence	9
Arts & Letters Course (prefix different from sequence)	3
Social Science Sequence	8-9
Social Science Courses (prefix different from sequence)	9
CH-221/222/223 General Chemistry	15
MTH-252/253 Calculus with Analytic Geometry	10
PH-211/212/213 General Physics with Calculus	15
MTH-256 Differential Equations	4
CS-120 Survey of Computing [C]	4
Total:	97-98

Note: A minimum of 90 credits is required for an AAOT degree.

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

Child & Family Studies

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

Contact Patricia McIlveen, ext. 2240, or the Advising & Counseling Center, ext. 2213.

<i>Required courses for AAOT degree</i>	<i>credits</i>
WR-121/122/123 or 227 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-111 College Algebra	4

Suggested courses to meet additional AAOT requirements

Arts & Letters Sequence	9
Arts & Letters Course (prefix different from sequence)	3
Social Science Sequence	8-9
Social Science Courses (prefixes different from sequence)	6
Lab Science Sequence	12-15
Additional Science or Math Courses	3
CS-120 Survey of Computing [C]	4
Electives	29-31
Total:	93-99

Note: A minimum of 90 credits is required for an AAOT degree.

Chiropractic

PRE-PROFESSIONAL PROGRAM
ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

Students who complete the program of study outlined here may apply for admission to a chiropractic school.

Contact Dave Arter, ext. 2210, or the Advising & Counseling Center, ext. 2213.

<i>Required courses for AAOT degree</i>	<i>credits</i>
WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-112 Trigonometry/Pre-calculus	4

Suggested courses to meet additional AAOT requirements

Arts & Letters Sequence	9
Arts & Letters Course (prefix different from sequence)	3
PSY-200/205/219 Psychology	9
Social Science Courses (prefix different from sequence)	9
CH-221/222/223 General Chemistry	15
CH-241/242/243 Organic Chemistry	12
PH-201/202/203 General Physics	15
Select one of the following sequences:	12-15
BI-231/232/233 Human Anatomy & Physiology	12
BI-211/212/213 Biology	15
Total:	103-106

Note: A minimum of 90 credits is required for an AAOT degree.

Communications/Speech

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

A bachelor's degree in communications/speech prepares a student to work in sales, broadcasting, business communications, advertising, public relations and teaching.

Contact Kelly Brennan, ext. 2726, or the Advising & Counseling Center, ext. 2213.

Required courses for AAOT degree

	<i>credits</i>
WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
SP-112 Persuasive Speaking	3
SP-126 Communications Between the Sexes	3
MTH-111 College Algebra or MTH-105 Introduction to Contemporary Mathematics	4

Suggested courses to meet additional AAOT requirements

Arts & Letters Course (prefix different from sequence)	6
HST-101/102/103 History of Western Civilization	12
Social Science Course	3
BI-101/102/103 General Biology	12
CS-120 Survey of Computing [C]	4
CS-121 Computer Applications [C]	3
SP-221/222/223 Forensics	3
Select-26 credits from the following:	26
RB-110 Introduction to Radio Broadcasting	3
RB-111 Radio Broadcasting Lab	2
SP-129 Oral Interpretation	1-3
SP-167 Parliamentary Procedure	1-3
SP-150 Competitive Platform Speaking	1-3
SP-211 Communication Theory	3
SP-218 Interpersonal Communications	3
SP-219 Small Group Discussion	3
SP-229 Oral Interpretation	1-3
SP-267 Parliamentary Procedure	1-3
SP-250 Competitive Platform Speaking	1-3
TA-101/102/103 Appreciation of Theatre	9
TA-141/142/143 Acting	9
TA-153/253 Rehearsal & Performance	9

Total: 94

Note: A minimum of 90 credits is required for an AAOT degree.

Computer Science

ONE-YEAR TRANSFER CURRICULUM

Students in this program of study should complete only their freshman year at Clackamas Community College.

Contact Linda Anderson, ext. 2539, or the Advising & Counseling Center, ext. 2213.

Suggested courses

	<i>credits</i>
WR-121/122 English Composition	6
WR-227 Technical Report Writing [C]	3
SP-111 Public Speaking	3
Social Science Sequence	8-12
MTH-251/252/253 Calculus with Analytic Geometry	15
CS-161 Computer Science I [C]	4
CS-162 Computer Science II	4
CS-260 Computer Science III: Data Structures	4
MTH-231 Elements of Discrete Mathematics	4

Total: 51-55

Corrections

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

A bachelor's degree in social science with a major in corrections prepares students for employment with federal, state and local law enforcement agencies through practice in the study of crime, delinquency and corrections.

Contact Dick Ashbaugh, ext. 2237, or the Advising & Counseling Center, ext. 2213.

Required courses for AAOT degree

	<i>credits</i>
WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-105 Introduction to Contemporary Mathematics	4

Suggested courses to meet additional AAOT requirements

PHL-101 Philosophical Problems	3
PHL-102 Ethics	3
PHL-103 Critical Thinking	3
Arts & Letters Course (prefix different from sequence)	6
SOC-204 Introduction to Sociology	3
SOC-205 Social Stratification & Social Systems	3
SOC-206 Institutions & Social Change	3
PSY-200/205/219 Psychology	9
BI-101/102/103 General Biology	12
CS-120 Survey of Computing [C]	4
CJA-101 Criminology	3
CJA-110 Introduction to Law Enforcement	3
CJA-120 Judicial Process	3
CJA-130 Introduction to Corrections	3
CJA-201 Juvenile Delinquency	3
CJA-213 Interview & Interrogation	3
CJA-230 Juvenile Corrections	3
CJA-232 Corrections Casework	3
CJA-280 Criminal Justice/Corrections/CWE	6

Total: 98

Note: A minimum of 90 credits is required for an AAOT degree.

Criminal Justice

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

A bachelor's degree in social science with a major in criminal justice prepares a student for employment with federal, state and local law enforcement agencies.

Contact Dick Ashbaugh, ext. 2237, or the Advising & Counseling Center, ext. 2213.

Required courses for AAOT degree

	<i>credits</i>
WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-105 Introduction to Contemporary Mathematics	4

Suggested courses to meet additional AAOT requirements

PHL-101 Philosophical Problems	3
PHL-102 Ethics	3
PHL-103 Critical Reasoning	3
Arts & Letters Course (prefix different from sequence)	6
SOC-204 Introduction to Sociology	3
SOC-205 Social Stratification & Social Systems	3
SOC-206 Institutions & Social Change	3
PSY-200/205/219 Psychology	9
BI-101/102/103 General Biology	12
CS-120 Survey of Computing [C]	4
CJA-101 Criminology	3

CJA-110 Introduction to Law Enforcement	3
CJA-120 Judicial Process	3
CJA-130 Introduction to Corrections	3
CJA-200 Community Relations/Policing	3
CJA-213 Interview & Interrogation	3
CJA-220 Substantive Law	3
CJA-222 Procedural Law	3
CJA-280 Criminal Justice/Corrections/CWE	6
<i>Total:</i>	98

Note: A minimum of 90 credits is required for an AAOT degree.

Dance

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

Contact Jim Jackson, ext. 2295, or the Advising & Counseling Center, ext. 2213.

<i>Required courses for AAOT degree</i>	<i>credits</i>
WR-121/122/123 or 227 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-111 College Algebra	4

<i>Suggested courses to meet additional AAOT requirements</i>	
Arts & Letters Sequence	9
Arts & Letters Course (prefix different from sequence)	3
Social Science Sequence	8-9
Social Science Courses (prefixes different from sequence)	6
Lab Science Sequence	12-15
Additional Science or Math Courses	3
CS-120 Survey of Computing [C]	4
Electives	29-31
<i>Total:</i>	93-99

Note: A minimum of 90 credits is required for an AAOT degree.

Dental Hygiene

PRE-PROFESSIONAL PROGRAM ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

Students completing the two-year program outlined below may apply for admission to a bachelor's degree program in dental hygiene. See an advisor for specific transfer information.

Contact Dave Arter, ext. 2210, or the Advising & Counseling Center, ext. 2213.

<i>Required courses for AAOT degree</i>	<i>credits</i>
WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-112 Trigonometry/Pre-calculus	4

<i>Suggested courses to meet additional AAOT requirements</i>	
Arts & Letters Sequence	9
Arts & Letters Course (prefix different from sequence)	3
PSY-200/205/219 Psychology	9
Social Science Courses (prefix different from sequence)	7-9
CH-104/105/106 Introductory Chemistry	15
PH-201/202/203 General Physics	15
FN-225 Nutrition	4
Select one of the following sequences:	12
BI-101/102/103 General Biology	
BI-231/232/233 Human Anatomy & Physiology I, II & III	
<i>Total:</i>	93-95

Note: A minimum of 90 credits is required for an AAOT degree.

Dentistry

PRE-PROFESSIONAL PROGRAM ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

A bachelor's degree with a science emphasis prepares a student to apply to dental school.

Contact Dave Arter, ext. 2210, or the Advising & Counseling Center, ext. 2213.

<i>Required courses for AAOT degree</i>	<i>credits</i>
WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-111 College Algebra	4

<i>Suggested courses to meet additional AAOT requirements</i>	
Arts & Letters Sequence	9
Arts & Letters Course (prefix different from sequence)	3
PSY-200/205/219 Psychology	9
Social Science Courses (prefix different from sequence)	6
CH-221/222/223 General Chemistry	15
MTH-112 Trigonometry/Pre-calculus	4
MTH-251 Calculus I	5
CH-241/242/243 Organic Chemistry	12
PH-201/202/203 General Physics	15
BI-211/212/213 Biology	15
<i>Total:</i>	112

Note: A minimum of 90 credits is required for an AAOT degree.

Early Childhood Education

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

Contact Patricia McIlveen, ext. 2240, or the Advising & Counseling Center, ext. 2213.

<i>Required courses for AAOT degree</i>	<i>credits</i>
WR-121/122/123 or 227 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-111 College Algebra	4

<i>Suggested courses to meet additional AAOT requirements</i>	
Arts & Letters Sequence	9
Arts & Letters Course (prefix different from sequence)	3
Social Science Sequence	8-9
Social Science Courses (prefixes different from sequence)	6
Lab Science Sequence	12-15
Additional Science or Math Courses	3
CS-120 Survey of Computing [C]	4
Electives	29-31
<i>Total:</i>	93-99

Note: A minimum of 90 credits is required for an AAOT degree.

Economics

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

A bachelor's degree in economics prepares a student for jobs with government agencies and businesses, or for admission to graduate school in law and business.

Contact Eric Lewis, ext. 2551, or the Advising & Counseling Center, ext. 2213.

Required courses for AAOT degree *credits*

WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-251 Calculus I	5

Suggested courses to meet additional AAOT requirements

Arts & Letters Sequence	9
Arts & Letters Course (prefix different from sequence)	3
EC-201/202 Principles of Economics	8
Social Science Courses (prefix different from sequence)	9
Lab Science Sequence	12
MTH-243/244 Introduction to Probability & Statistics	8
BA-212 Financial Accounting II	4
BA-213 Decision Making with Accounting Information	4
Electives (CS-120/121 recommended)	17
<i>Total:</i>	94

Note: A minimum of 90 credits is required for an AAOT degree.

Education, Elementary

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

This curriculum is designed to fulfill lower division transfer requirements for a bachelor's degree and subsequent certification as an elementary teacher. See an advisor for the requirements of specific institutions.

Contact Mindy Brown, ext. 2261, or Paula Hamm, ext. 2804, or the Advising & Counseling Center, ext. 2213.

Required courses for AAOT degree *credits*

WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-211/212/213 Fundamentals of Elementary Math	12

Suggested courses to meet additional AAOT requirements

Arts & Letters Sequence (must be literature)	9
Arts & Letters Course (prefix different from sequence)	3
HST-201/202/203 History of the United States	12
PSY-200/205/219 Psychology	9
BI-101/102/103 General Biology	12
GEO-110 Introduction to Cultural & Human Geography	3
CS-120 Survey of Computing [C]	4
GS-104/105/106 Physical Science Sequence	12
ED-280 Education/CWE	2-6
Electives (ENG-253/254/255, ART, MUS recommended)	5
<i>Total:</i>	98-102

Note: A minimum of 90 credits is required for an AAOT degree.

Education, Secondary

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

Students interested in becoming secondary teachers must see an advisor. In most cases certification may require a fifth year of study; see an advisor for the requirements of specific institutions.

Contact Mindy Brown, ext. 2261, or Paula Hamm, ext. 2804, or the Advising & Counseling Center, ext. 2213.

Required courses for AAOT degree *credits*

WR-121/122/123 or 227 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-111 College Algebra	4

Suggested courses to meet additional AAOT requirements

Arts & Letters Sequence	9
Arts & Letters Course (prefix different from sequence)	3
Social Science Sequence	8-9
Social Science Courses (prefixes different from sequence)	6
Lab Science Sequence	12-15
Additional Science or Math Courses	3
CS-120 Survey of Computings [C]	4
Electives	29-31
<i>Total:</i>	93-99

Note: A minimum of 90 credits is required for an AAOT degree.

Education, Technology Education

OSU TRANSFER AGREEMENT

This curriculum is designed for transfer to the Oregon State University Technology Education program where the second two years of the Bachelor of Science degree can be completed. The professional/technical courses in this program may be taken in a variety of fields that include automotive, building construction, computer science, drafting and manufacturing technology for the person who wants to teach in a high school. Concentration in a specific discipline may be considered for people who are interested in teaching at a community college. Community college teaching usually requires several years of industry-related experience in addition to education. Requirements vary between schools. Students entering the Technology Education program at OSU must be computer literate to a high degree which includes Web access and maintenance.

Contact Terence Shumaker, ext. 2365, or the Advising & Counseling Center, ext. 2213.

Suggested courses

WR-121/122 English Composition	6
WR-227 Technical Report Writing [C]	3
HPE-295 Health & Fitness for Life	3
SP-111 Public Speaking	3
MTH-111 College Algebra	4
Arts & Letters Course (prefix different from sequence)	3
BI-101/102/103 General Biology	12
G-201/202 General Geology	8
MTH-112 Trigonometry/Pre-calculus	4
PH-201/202/203 General Physics	15
EC-201/202 Principles of Economics	8
PSY-200/205 Psychology	6

PHL-102 Ethics	3
ED-280 Technology Education/CWE	6
CDT-104 Professional Computing Basics [C]	2
Professional/Technical Electives	22
Total:	108

Note: A minimum of 90 credits is required for an AAOT degree.

Engineering

PRE-PROFESSIONAL PROGRAM SUGGESTED TRANSFER CURRICULUM

This general engineering program of study will meet most course requirements for transfer to professional engineering schools. A bachelor's degree in engineering prepares a student to plan, design and build projects in both private industry and the public sector. The Associate of Arts Oregon Transfer degree is not recommended for this major; additional courses are required for an associate degree. See an advisor to plan a program that meets specific goals.

Contact Dan Lundy, ext. 2478, or the Advising & Counseling Center, ext. 2213.

<u>Suggested courses</u>	<u>credits</u>
WR-121 English Composition	3
Health/Physical Education Requirement	3
Arts & Letters Sequence	9
MTH-251/252/253 Calculus with Analytic Geometry	15
Social Science Sequence	8-9
CH-221/222/223 General Chemistry	15
PH-211/212/213 General Physics with Calculus	15
GE-101A Engineering Problem Solving**	2
GE-101B Engineering Programming**	2
GE-102 Engineering Computation Structures*	4
GE-115 Engineering Graphics	4
GE-211/212/213 Engineering Mechanics	12
EE-221 Electrical Circuit Analysis	5
MTH-254 Vector Calculus I/Multivariate Calculus	5
MTH-256 Differential Equations	4
MTH-261 Linear Algebra	4
Total:	110-111

*Only for electrical & computer engineering majors.

**Both GE-101A & GE-101B must be taken by all engineering majors.

English

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

A bachelor's degree in English prepares a student for careers in education, journalism, or communications. It is also desirable as undergraduate training for law, government, social work, public service, business and advertising.

Contact Emily Orlando, ext. 2372, or the Advising & Counseling Center, ext. 2213.

<u>Required courses for AAOT degree</u>	<u>credits</u>
WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-111 College Algebra or MTH-105 Introduction to Contemporary Mathematics	4

Suggested courses to meet additional AAOT requirements

ENG-104/105/106 Introduction to Literature or ENG-107/108/109 Introduction to World Literature	9
Foreign Language Sequence (second year)	12
Social Science Sequences	8-9
Social Science Courses (prefix different from sequence)	9
Lab Science Sequence	12
CS-120 Survey of Computing [C]	4
ENG-201/202/203 Shakespeare	9
ENG-253/254/255 Survey of American Literature or ENG-204/205/206 Survey of English Literature	9
Elective	3
Total:	94-95

Note: A minimum of 90 credits is required for an AAOT degree.

Entomology

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

A bachelor's degree in entomology prepares a student for graduate work or employment in private industry or with state or federal government.

Contact Dave Arter, ext. 2210, or the Advising & Counseling Center, ext. 2213.

<u>Required courses for AAOT degree</u>	<u>credits</u>
WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-251 Calculus with Analytic Geometry	5

Suggested courses to meet additional AAOT requirements

Arts & Letters Sequence	9
Arts & Letters Course (prefix different from sequence)	6
Social Science Sequence	8-9
Social Science Courses (prefix different from sequence)	6
MTH-252 Calculus with Analytic Geometry	5
CH-221/222/223 General Chemistry	15
BI-211/212/213 Biology	15
PH-201/202/203 General Physics	12
Total:	96-97

Note: A minimum of 90 credits is required for an AAOT degree.

Environmental Health & Safety

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

Contact Dave Arter, ext. 2210, or the Advising & Counseling Center, ext. 2213.

<u>Required courses for AAOT degree</u>	<u>credits</u>
WR-121/122/123 or 227 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-111 College Algebra	4

Suggested courses to meet additional AAOT requirements

Arts & Letters Sequence	9
Arts & Letters Course (prefix different from sequence)	3
Social Science Sequence	8-9
Social Science Courses (prefixes different from sequence)	6
Lab Science Sequence	12-15
Additional Science or Math Courses	3
CS-120 Survey of Computing [C]	4
Electives	29-31
Total:	93-99

Note: A minimum of 90 credits is required for an AAOT degree.

Environmental Science

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

A bachelor's degree in environmental science prepares a student for graduate work or employment in private industry or with state or federal government.

Contact Dave Arter, ext. 2210, or the Advising & Counseling Center, ext. 2213.

Required courses for AAOT degree

	<i>credits</i>
WR-121/122 English Composition	6
WR-227 Technical Report Writing [C]	3
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-243 Introduction to Probability & Statistics	4

Suggested courses to meet additional AAOT requirements

Arts & Letters Sequence	9
PHL-102 Ethics	3
EC-201/202 Principles of Economics	8
Social Science Courses (prefix different from sequence)	9
MTH-244 Introduction to Probability & Statistics	4
CH-221/222/223 General Chemistry	15
BI-211/212/213 Biology	15
PH-201/202/203 Physics	15
CS-120 Survey of Computing [C]	4

Total: 101

Note: A minimum of 90 credits is required for an AAOT degree.

Fisheries/Forestry/ Wildlife Management

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

A bachelor's degree in fisheries, forestry or wildlife management provides a student with training for resource management, teaching and extension work. Forestry students taking the two-year program at Clackamas will probably need three additional years at a college or university because some required courses are not available.

Contact Dave Arter, ext. 2210, or the Advising & Counseling Center, ext. 2213.

Required courses for AAOT degree

	<i>credits</i>
WR-121/122 English Composition	6
WR-227 Technical Report Writing [C]	3
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-251 Calculus with Analytic Geometry	5

Suggested courses to meet additional AAOT requirements

Arts & Letters Sequence	9
Arts & Letters Course (prefix different from sequence)	3
EC-201/202 Principles of Economics	8
Social Science Courses (prefix different from sequence)	9
CH-221/222/223 General Chemistry	15
BA-131 Introduction to Business Computing [C]	4
BI-211/212/213 Biology	15
PH-201 General Physics	5
Electives	6

Total: 94

Note: A minimum of 90 credits is required for an AAOT degree.

Foreign Language

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

A bachelor's degree in foreign language, together with the relevant teacher certification requirements, prepares a student to teach at levels K-12, work in international business, the foreign services, or for a government agency. Translation is also an option (usually at entry levels).

Contact David Miller, ext. 2257, or the Advising & Counseling Center, ext. 2213.

Required courses for AAOT degree

	<i>credits</i>
WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-111 College Algebra or MTH-105 Introduction to Contemporary Mathematics	4

Suggested courses to meet additional AAOT requirements

Foreign Language Sequence (second year)	12
Arts & Letters Course (prefix different from sequence) (select two from the list below)	6
HST-101/102/103 History of Western Civilization	12
Social Science Courses (select two from the list below)	6-7
Lab Science Sequence	12
CS-120 Survey of Computing [C]	4
Select 26 elective credits from the following:	14
ANT-103 Cultural Anthropology	4
ART-204 Art History	3
EC-115 Introduction to Basic Economics	3
ENG-107/108/109 World Literature	9
ENG-250/251/252 Mythology	9
GEO-100/110/130 Geography	9
MUS-202 Introduction to Music Literature	3
R-102/103 Comparative Religions (Western/Eastern)	6

Total: 97-98

Note: A minimum of 90 credits is required for an AAOT degree.

Geography

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

A bachelor's degree in geography prepares a student for job opportunities in planning, environmental research, cartography, teaching and other areas which traditionally employ liberal arts graduates.

Contact Eric Lewis, ext. 2251, or the Advising & Counseling Center, ext. 2213.

Required courses for AAOT degree

	<i>credits</i>
WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-111 College Algebra	4

Suggested courses to meet additional AAOT requirements

Arts & Letters Sequence	9
Arts & Letters Course (prefix different from sequence)	6
GEO-100/110/130 Geography	9
Social Science Courses (prefix different from sequence)	15
GEO-230 World Regions & Landscapes	4
Lab Science Sequence	12
CS-120 Survey of Computing [C]	4
MTH-243/244 Introduction to Probability & Statistics	8
Electives (CS-121 Computer Applications [C] recommended)	9

Total: 95

Note: A minimum of 90 credits is required for an AAOT degree.

Geology

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

A bachelor's degree in geology prepares a student for professions in teaching, oceanography, petroleum and mineral mining, land use planning and construction engineering. Employment opportunities range from county, state and federal agencies to private business and corporations. Some careers require graduate work.

Contact Dave Arter, ext. 2210, or the Advising & Counseling Center, ext. 2213.

<i>Required courses for AAOT degree</i>	<i>credits</i>
WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-251 Calculus with Analytic Geometry	5

Suggested courses to meet additional AAOT requirements

Arts & Letters Sequence	9
Arts & Letters Course (prefix different from sequence)	3
Social Science Sequence	8-9
Social Science Courses (prefix different from sequence)	9
MTH-252/253 Calculus with Analytic Geometry	10
G-201/202/203 General Geology	12
CH-221/222/223 General Chemistry	15
CS-120 Survey of Computing [C]	4
PH-201/202/203 or PH-211/212/213	15

Total: 105-106

Note: A minimum of 90 credits is required for an AAOT degree.

Health Care Administration

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

A bachelor's degree in health care administration prepares a student for health care management positions in acute, community and long term care systems. Additionally, employment opportunities exist in federal and state government, as well as in the insurance field. Students are advised to work with an advisor for information about specific institutions.

Contact ext. 2527, or the Advising & Counseling Center, ext. 2213.

<i>Required courses for AAOT degree</i>	<i>credits</i>
WR-121/122 English Composition	6
WR-227 Technical Report Writing [C]	3
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-111 College Algebra	4

Suggested courses to meet additional AAOT requirements

Arts & Letters Sequence	9
Arts & Letters Course (prefix different from sequence)	3
EC-201/202 Principles of Economics	8
Social Science Courses (prefix different from sequence)	9
CH-104/105/106 Introductory Chemistry	15
BI-101 General Biology	4
BI-234 Introductory Microbiology	4
CS-120 Survey of Computing [C]	4
BA-131 Introduction to Business Computing [C]	4
BA-211 Financial Accounting I	4
Electives (contact advisor at four-year institution)	10

Total: 93

Note: A minimum of 90 credits is required for an AAOT degree.

Health Education

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

Contact Jim Jackson, ext. 2295, or the Advising & Counseling Center, ext. 2213.

<i>Required courses for AAOT degree</i>	<i>credits</i>
WR-121/122/123 or 227 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-111 College Algebra	4

Suggested courses to meet additional AAOT requirements

Arts & Letters Sequence	9
Arts & Letters Course (prefix different from sequence)	3
Social Science Sequence	8-9
Social Science Courses (prefixes different from sequence)	6
Lab Science Sequence	12-15
Additional Science or Math Courses	3
CS-120 Survey of Computing [C]	4
Electives	29-31

Total: 93-99

Note: A minimum of 90 credits is required for an AAOT degree.

History

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

A bachelor's degree in history prepares a student to be a teacher, journalist, researcher or work in a museum. Many specialized careers require graduate work.

Contact Eric Lewis, ext. 2551, or the Advising & Counseling Center, ext. 2213.

<i>Required courses for AAOT degree</i>	<i>credits</i>
WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-243 Introduction to Probability & Statistics	4

Suggested courses to meet additional AAOT requirements

Arts & Letters Sequence	9-12
Arts & Letters Course (prefix different from sequence)	3
HST-101/102/103 History of Western Civilization	12
EC-201/202 Principles of Economics	8
Lab Science Sequence	12
MTH-244 Introduction to Probability & Statistics	4
HST-201/202/203 History of the United States	12
CS-120 Survey of Computing [C]	4
Electives (social science courses recommended)	13

Total: 96-99

Note: A minimum of 90 credits is required for an AAOT degree.

Horticulture

OSU TRANSFER AGREEMENT ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

A bachelor's degree in Horticulture prepares students for employment in the industries of Greenhouse, Nursery, and Landscape utilizing fundamental life and physical sciences, technologies, and management systems.

The following courses transfer to the Oregon State University Department of Horticulture program in addition to the "Approved Baccalaureate Core Courses" required by OSU.

For more information contact Elizabeth Howley, ext. 2389, or the Advising & Counseling Center, ext. 2213.

<i>Required courses for AAOT degree</i>	<i>credits</i>
WR-121/122/123 or 227 English Composition	9
HPE-295 Health & Fitness for Life	3
SP-111 Public Speaking	3
MTH-243 Probability and Statistics	4

Suggested courses to meet additional AAOT requirements

BA-211 Financial Accounting I or BA-226 Intro to Business Law I	4
BI-211/212/213 Biology	15
CH-121/122/123 General Chemistry	15
Arts & Letters Sequence	9
Arts & Letters Course (Prefix different from sequence)	3-6
Social Science Sequence	8-9
Social Science Requirements (Prefix different from sequence)	6-9
HOR-111 Horticulture Practicum/Fall	6
HOR-215 Herbaceous Perennial	3
HOR-222 Horticultural Computer Applications [C]	2
HOR-226 Plant Identification/Fall	3
HOR-227 Plant Identification/Winter	3
HOR-228 Plant Identification/Spring	3
HOR-234 Intermediate Landscape Design	3
HOR-245 Advanced Landscape Design	3

Total: 105-112

15 to 20 additional non-equivalent HOR credits will be counted toward the 180 hours required by OSU.

Note: A minimum of 90 credits is required for an AAOT degree.

Hospitality, Tourism & Recreation

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

Contact Jim Jackson, ext. 2295, or the Advising & Counseling Center, ext. 2213.

<i>Required courses for AAOT degree</i>	<i>credits</i>
WR-121/122/123 or 227 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-111 College Algebra	4

Suggested courses to meet additional AAOT requirements

Arts & Letters Sequence	9
Arts & Letters Course (prefix different from sequence)	3
Social Science Sequence	8-9
Social Science Courses (prefixes different from sequence)	6
Lab Science Sequence	12-15
Additional Science or Math Courses	3
CS-120 Survey of Computing [C]	4
Electives	29-31

Total: 93-99

Note: A minimum of 90 credits is required for an AAOT degree.

Housing Design/ Interior Merchandising

OSU TRANSFER AGREEMENT

The following courses transfer to the OSU Department of Apparel, Interiors, Housing & Merchandising program in addition to the "Approved Baccalaureate Core Courses" required by Oregon State University.

Contact Terence Shumaker, ext. 2365, or the Advising & Counseling Center, ext. 2213.

<i>Courses</i>	<i>credits</i>
CDT-103 Computer-Aided Drafting I	4
CDT-105 Computer-Aided Drafting II	4
CDT-107 Computer-Aided Drafting III	4
CDT-202 Architectural Drafting I	4
CDT-212 Architectural Drafting II	4
CDT-213 Architectural Drafting III	4
Total:	24

Human Development/ Family Services

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

Contact ext. 2527, or the Advising & Counseling Center, ext. 2213.

<i>Required courses for AAOT degree</i>	<i>credits</i>
WR-121/122/123 or 227 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-111 College Algebra	4

Suggested courses to meet additional AAOT requirements

Arts & Letters Sequence	9
Arts & Letters Course (prefix different from sequence)	3
Social Science Sequence	8-9
Social Science Courses (prefixes different from sequence)	6
Lab Science Sequence	12-15
Additional Science or Math Courses	3
CS-120 Survey of Computing [C]	4
Electives	29-31

Total: 93-99

Note: A minimum of 90 credits is required for an AAOT degree.

Interior Design

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

Contact the Advising & Counseling Center, ext. 2213.

<i>Required courses for AAOT degree</i>	<i>credits</i>
WR-121/122/123 or 227 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-111 College Algebra	4

Suggested courses to meet additional AAOT requirements

Arts & Letters Sequence	9
Arts & Letters Course (prefix different from sequence)	3
Social Science Sequence	8-9
Social Science Courses (prefixes different from sequence)	6
Lab Science Sequence	12-15
Additional Science or Math Courses	3
CS-120 Survey of Computing [C]	4
Electives	29-31
<i>Total:</i>	<i>93-99</i>

Note: A minimum of 90 credits is required for an AAOT degree.

International Studies

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

A bachelor's degree in international education prepares a student for employment in international business or trade, or work for government agencies which deal with other countries.

Contact Eric Lewis, ext. 2251, or David Miller, ext. 2257, or the Advising & Counseling Center, ext. 2213.

<i>Required courses for AAOT degree</i>	<i>credits</i>
WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-111 College Algebra or MTH-105 Introduction to Contemporary Mathematics	4

Suggested courses to meet additional AAOT requirements

Foreign Language Sequence (second year)	12
GEO-100/110/130 Geography	9
PS-205 International Relations	3
Social Science Courses (select two* from the list below)	6-8
Lab Science Sequence	12
CS-120 Survey of Computing [C]	4
Additional Foreign Language Sequence	12
Select 18 elective credits from the following:	18
ANT-101/102/103 Anthropology*	12
ART-204/205/206 Art History	9
BA-234 Introduction to International Marketing	4
EC-201/202 Principles of Economics*	8
ENG-107/108/109 World Literature	9
ENG-250/251/252 Mythology	9
HST-101/102/103 History of Western Civilization*	12
PSY-205 Psychology as a Social Science*	3
SOC-204/205/206 Sociology*	9
R-101/103 Comparative Religions (Western/Eastern)	6
<i>Total:</i>	<i>95-97</i>

Note: A minimum of 90 credits is required for an AAOT degree.

Journalism

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

A bachelor's degree in journalism prepares a student to write, photograph, and edit for newspapers, magazines, and web-based publications; to work in advertising, publishing, radio and television news; or to teach.

Contact Linda Vogt, ext. 2310, or the Advising & Counseling Center, ext. 2213.

<i>Required courses for AAOT degree</i>	<i>credits</i>
WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-111 College Algebra or MTH-105 Introduction to Contemporary Mathematics	4

Suggested courses to meet additional AAOT requirements

ENG-104/105/106 Introduction to Literature	9
J-211 Mass Media & Society	3
J-216 Reporting [C](may also be offered online)	3
HST-101/102/103 History of Western Civilization	12
EC-201/202 Principles of Economics	8
Lab Science Sequence	12
CS-120 Survey of Computing [C]	4
J-134 Photojournalism	3
J-215 Publications Lab	1
J-218 Editing & Design [C]	3
J-226 Electronic Newspaper Production [C]	9
BT-220P PageMaker	3
Electives	6
<i>Total:</i>	<i>95</i>

Note: A minimum of 90 credits is required for an AAOT degree.

Landscape Architecture

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

A bachelor's degree in landscape architecture may prepare a student for a career in landscape planning.

Contact Elizabeth Howley, ext. 2389, or the Advising & Counseling Center, ext. 2213.

<i>Required courses for AAOT degree</i>	<i>credits</i>
WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-112 Trigonometry/Pre-calculus	4

Suggested courses to meet additional AAOT requirements

Arts & Letters Sequence	9
Arts & Letters Course (prefix different from sequence)	6
Social Science Sequence	8-9
Social Science Courses (prefix different from sequence)	6
ESR-171/172/173 Environmental Science	12
CS-120 Survey of Computing [C] or CAD-151 AutoCAD Level 1	2-4
Electives	33
<i>Total:</i>	<i>95-98</i>

Note: A minimum of 90 credits is required for an AAOT degree.

Liberal Studies

ACCELERATED DEGREE ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

A bachelor's degree in liberal studies is an excellent foundation for graduate work in specialized areas or employment which demands interpretive reading, writing and research skills.

Contact Theresa Tuffli, ext. 2214, or the Advising & Counseling Center, ext. 2213.

<i>Required courses for AAOT degree</i>	<i>credits</i>
WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
SP-112 Persuasive Speaking	3
MTH-111 College Algebra	4

Suggested courses to meet additional AAOT requirements

Humanities Inquiry Sequence	9
ART-206 History of Western Art	3
HST-238/239/240 History of Oregon	9
ANT-103 Cultural Anthropology	4
Social Science Inquiry Sequence	9
ASC-200 Natural Science Inquiry	4
ASC-201/202 Integrated Science	8
MTH-243 Introduction to Probability and Statistics	4
BA-131 Introduction to Business Computing [C]	4
HST-203 History of the United States	4
MUS-201 Introduction to Music Literature: Classical	3
PHL-102 Ethics	3
PS-203 U.S. Government: State & Local Institutions	3
R-210 World Religions	3
SP-218 Interpersonal Communication	3
<i>Total:</i>	<i>95</i>

Note: A minimum of 90 credits is required for an AAOT degree.

Mathematics

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

A bachelor's degree in mathematics prepares a student for a career in teaching, in applied mathematics for industry or government agencies, or as an actuary or statistician.

Contact Kurt Lewandowski, ext. 2431, or the Advising & Counseling Center, ext. 2213.

<i>Required courses for AAOT degree</i>	<i>credits</i>
WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-251 Calculus with Analytic Geometry	5

Suggested courses to meet additional AAOT requirements

Arts & Letters Sequence	9
Arts & Letters Course (prefix different from sequence)	6
Social Science Sequence	8-9
Social Science Courses (prefix different from sequence)	6
Lab Science Sequence	12
MTH-252/253 Calculus with Analytic Geometry	10
CS-161 Computer Science I [C]	4
CS-162 Computer Science II	4
MTH-231 Discrete Mathematics	4
MTH-254 Vector Calculus I/Multivariate Calculus	5
MTH-256 Differential Equations	4
MTH-261 Linear Algebra	4
Elective	1

Total: 97-98

Note: A minimum of 90 credits is required for an AAOT degree.

Medicine

PRE-PROFESSIONAL PROGRAM ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

A bachelor's degree with a science emphasis prepares a student to apply to medical school.

Contact Dave Arter, ext. 2210, or the Advising & Counseling Center, ext. 2213.

<i>Required courses for AAOT degree</i>	<i>credits</i>
WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-251 Calculus with Analytic Geometry	5

Suggested courses to meet additional AAOT requirements

Arts & Letters Sequence	9
Arts & Letters Course (prefix different from sequence)	3
PSY-200/205/219 Psychology	9
Social Science Courses (prefix different from sequence)	9
MTH-252 Calculus with Analytic Geometry	5
CH-221/222/223 General Chemistry	15
BI-211/212/213 Biology	15
Select one of the following:	12-15
PH-201/202/203 General Physics	15
CH-241/242/243 Organic Chemistry	12

Total: 97-100

Note: A minimum of 90 credits is required for an AAOT degree.

Microbiology

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

A bachelor's degree in microbiology prepares a student for graduate work or employment as health officers, sanitarians and biotechnicians.

Contact Dave Arter, ext. 2210, or the Advising & Counseling Center, ext. 2213.

<i>Required courses for AAOT degree</i>	<i>credits</i>
WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-251 Calculus	5

<i>Suggested courses to meet additional AAOT requirements</i>	
Arts & Letters Sequence	9
Arts & Letters Course (prefix different from sequence)	6
Social Science Sequence	8-9
Social Science Courses (prefix different from sequence)	6
MTH-252 Calculus	5
CH-221/222/223 General Chemistry	15
BI-211/212/213 Biology	15
CS-120 Survey of Computing [C]	4
PH-201/202/203 General Physics	15
<i>Total: 103-104</i>	

Note: A minimum of 90 credits is required for an AAOT degree.

Music

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

A bachelor's degree in music prepares a student to teach, play professionally, compose or work in music-related businesses.

Contact Tom Wakeling, ext. 2434, or the Advising & Counseling Center, ext. 2213.

<i>Required courses for AAOT degree</i>	<i>credits</i>
WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-111 College Algebra or MTH-105 Introduction to Contemporary Mathematics	4

<i>Suggested courses to meet additional AAOT requirements</i>	
MUS-111/112/113 Music Theory I concurrent with MUS-111L/112L/113L MIDI Lab [C]	9
Arts & Letters Course (MUP classes recommended)	6
MUP-102/105/121/122/125/142/158 Ensemble*	3-6
MUP-202/205/221/222/225/242/258 Ensemble*	3-6
Social Science Sequence	8-9
Social Science Courses (prefix different from sequence)	6
Lab Science Sequence	12
Science/Math/Computer Science Course	3-4
MUS-114/115/116 and MUS-224/225/226 Aural Skills I, II	12
MUS-127/128/129 and MUS-214/215/216 Keyboard Skills I, II	12
MUP-171-MUP-191 and MUP-271-MUP-291 Individual Lessons*	6
MUS-211/212/213 Music Theory II concurrent with MUS-211L/212L/213L MIDI Lab [C]	9
MUS-189 Performance & Repertoire	1
<i>Total: 109-117</i>	

Note: A minimum of 90 credits is required for an AAOT degree.

*Six quarters of appropriate ensemble participation (MUP-102/105/121/122/125/142/158) and six quarters of private study (MUP-171-01 through MUP-191-01 and MUP-271-01 through MUP-291-01) are required, with three quarters at the 200 level.

Nursing

PRE-PROFESSIONAL PROGRAM

This is an example of a transfer program for students who wish to apply for a bachelor of science in nursing program. Additional courses may be required by individual four-year schools. See an advisor for specifics. Note: Foreign language is recommended.

Contact Arlene Jurgens, ext. 2323, Lisa Fithian, ext. 2272, or the Advising & Counseling Center, ext. 2213.

<i>Suggested courses</i>	<i>credits</i>
WR-121/122/123 English Composition	9
MTH-111 College Algebra	4
Arts & Letters Course (prefix different from sequence)	12
Literature Course	3
SOC-204/205 or-206	3
ANT-103 General Anthropology	4
BI-231/232/233 Human Anatomy & Physiology	12
CH-104/105/106 Introductory Chemistry	15
BI-234 Introductory Microbiology	4
FN-225 Nutrition	4
MTH-243 Probability & Statistics	4
PSY-200/205 or-219	3
PSY-215 Introduction to Developmental Psychology	3
SP-218 Interpersonal Communication	3
SP-219 Small Group Communication	3
Electives	7
<i>Total: 93</i>	

Nutrition & Food Management

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

Students who complete the two-year program outlined here may apply for admission into a bachelor's degree program in nutrition and food management.

Contact ext. 2527, or the Advising & Counseling Center, ext. 2213.

<i>Required courses for AAOT degree</i>	<i>credits</i>
WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-111 College Algebra	4

<i>Suggested courses to meet additional AAOT requirements</i>	
Arts & Letters Sequence	9
Arts & Letters Course (prefix different from sequence)	3
PSY-200/205/219 Psychology	9
EC-201/202 Principles of Economics	8
CH-221/222/223 General Chemistry	15
CH-241/242/243 Organic Chemistry	12
CS-120 Survey of Computing [C]	4
FN-225 Nutrition	4
Electives (contact advisor at four-year institution)	10
<i>Total: 93</i>	

Note: A minimum of 90 credits is required for an AAOT degree.

Occupational Therapy

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

Students who complete the two-year program of study outlined here may apply for admission into a bachelor's degree program in occupational therapy. See an advisor for requirements of specific four-year institution.

Contact Dave Arter, ext. 2210, or the Advising & Counseling Center, ext. 2213.

<i>Required courses for AAOT degree</i>	<i>credits</i>
WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-112 Trigonometry/Pre-calculus	4

Suggested courses to meet additional AAOT requirements

Arts & Letters Sequence	9
Arts & Letters Course (prefix different from sequence)	3
PSY-200/205/219 Psychology	9
SOC-204 Introduction to Sociology	3
SOC-205 Social Stratification & Social Systems	3
Social Science Course (prefix different from sequence)	3
BI-231/232/233 Human Anatomy & Physiology	12
BI-211 Biology	5
CS-120 Survey of Computing [C]	4
MTH-243 Introduction to Probability & Statistics	4
PH-201 General Physics	5
PSY-215 Introduction to Developmental Psychology	3
Electives	12
<i>Total:</i>	94

Note: A minimum of 90 credits is required for an AAOT degree.

Optometry

PRE-PROFESSIONAL PROGRAM ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

Students who complete the two-year program of study outlined here may apply for admission to a school of optometry.

Contact Dave Arter, ext. 2210, or the Advising & Counseling Center, ext. 2213.

<i>Required courses for AAOT degree</i>	<i>credits</i>
WR-121/122 English Composition	6
WR-227 Technical Report Writing [C]	3
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-112 Trigonometry/Pre-calculus	4

Suggested courses to meet additional AAOT requirements

Arts & Letters Sequence	9
Arts & Letters Course (prefix different from sequence)	3
PSY-200/205/219 Psychology	9
Social Science Courses (prefix different from sequence)	6
BI-231/232/233 Human Anatomy & Physiology	12
BI-234 Introductory Microbiology	4
BI-211 Biology	5
CH-221/222/223 General Chemistry	15
CH-241/242 Organic Chemistry	8
MTH-243/244 Introduction to Probability & Statistics	8
MTH-251 Calculus with Analytic Geometry	5
PH-201/202/203 General Physics	15
<i>Total:</i>	118

Note: A minimum of 90 credits is required for an AAOT degree.

Pharmacy

PRE-PROFESSIONAL PROGRAM ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

This two-year, pre-pharmacy curriculum prepares a student to apply for admission to a three-year professional program at a university with a pharmacy school.

Contact Dave Arter, ext. 2210, or the Advising & Counseling Center, ext. 2213.

<i>Required courses for AAOT degree</i>	<i>credits</i>
WR-121/122 English Composition	6
WR-227 Technical Report Writing [C]	3
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-251 Calculus I	5

Suggested courses to meet additional AAOT requirements

Arts & Letters Sequence	9
Arts & Letters Course (prefix different from sequence)	6
PSY-200/205/219 Psychology	9
EC-201/202 Principles of Economics	8
BI-211/212/213 Biology	15
BI-234 Introductory Microbiology	4
CH-221/222/223 General Chemistry	15
CH-241/242/243 Organic Chemistry	12
PH-201/202/203 General Physics	15
<i>Total:</i>	113

Note: A minimum of 90 credits is required for an AAOT degree.

Philosophy

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

Students who complete a bachelor's degree may apply for admission to a program in philosophy. A graduate degree is required for teaching.

Contact Eric Lewis, ext. 2251, or the Advising & Counseling Center, ext. 2213.

<i>Required courses for AAOT degree</i>	<i>credits</i>
WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-111 College Algebra	
or MTH-105 Introduction to Contemporary Mathematics	4

Suggested courses to meet additional AAOT requirements

PHL-101/102/103 /205/210/213/215 (any three)	9
Foreign Language Sequence (second year)	12
Social Science Sequence	9
Social Science Courses (prefix different from sequence)	9
Lab Science Sequence	12
CS-120 Survey of Computing [C]	4
Electives	20
<i>Total:</i>	94

Note: A minimum of 90 credits is required for an AAOT degree.

Physical Education/Exercise Science

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

A bachelor's degree in physical education/exercise science prepares a student to teach, coach, and manage recreational and fitness programs for industry, sports and health clubs, local governments, recreation districts and public schools.

Contact Jim Jackson, ext. 2295, or the Advising & Counseling Center, ext. 2213.

<i>Required courses for AAOT degree</i>	<i>credits</i>
WR-121/122/123 English Composition	9
HE-295 Health & Fitness for Life	3
SP-111 Public Speaking	3
MTH-111 College Algebra or MTH-105 Introduction to Contemporary Mathematics	4

<i>Suggested courses to meet additional AAOT requirements</i>	
Arts & Letters Sequence	9
Arts & Letters Course (prefix different from sequence)	6
Social Science Sequence	8-9
Social Science Courses (prefix different from sequence)	9
BI-101/102/103 General Biology	12
CS-120 Survey of Computing [C]	4
HE-252 First Aid/CPR	3
HE-250 Personal Health	3
PE-131 Introduction to Physical Education	3
PE-185 Physical Education	6
PE-194/294 Professional Activities	6
PE-280 Physical Education/CWE	6
<i>Total: 94-95</i>	

Note: A minimum of 90 credits is required for an AAOT degree.

Physical Therapy

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

Students who complete a bachelor's degree may apply for admission to a school of physical therapy. A master's degree is required to practice in the field.

Contact Dave Arter, ext. 2210, or the Advising & Counseling Center, ext. 2213.

<i>Required courses for AAOT degree</i>	<i>credits</i>
WR-121/122 English Composition	6
WR-227 Technical Report Writing [C]	3
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-243 Introduction to Probability & Statistics	4

<i>Suggested courses to meet additional AAOT requirements</i>	
Arts & Letters Sequence	9
Arts & Letters Course (prefix different from sequence)	3
PSY-200/205/219 Psychology	9
Social Science Courses (prefix different from sequence)	6
CH-221/222/223 General Chemistry	15
CH-241/242/243 Organic Chemistry	12
BI-211/212/213 Biology	15
BI-231/232/233 Human Anatomy & Physiology	12
PH-201/202/203 General Physics	18
<i>Total: 118</i>	

Note: A minimum of 90 credits is required for an AAOT degree.

Physics

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

A bachelor's degree in physics prepares a student for a variety of technical jobs and high school teaching. University teaching and most research jobs require a graduate degree.

Contact Dave Arter, ext. 2210, or the Advising & Counseling Center, ext. 2213.

<i>Required courses for AAOT degree</i>	<i>credits</i>
WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-251 Calculus with Analytical Geometry	5

<i>Suggested courses to meet additional AAOT requirements</i>	
Arts & Letters Sequence	9
Arts & Letters Course (prefix different from sequence)	3
Social Science Sequence	8-9
Social Science Courses (prefix different from sequence)	9
MTH-252/253 Calculus with Analytical Geometry	10
CH-221/222/223 General Chemistry	15
MTH-254 Vector Calculus I/Multivariate Calculus	5
MTH-255 Linear Algebra	4
MTH-256 Differential Equations	4
PH-211/212/213 General Physics with Calculus	15
<i>Total: 102-103</i>	

Note: A minimum of 90 credits is required for an AAOT degree.

Political Science

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

A bachelor's degree in political science prepares a student for jobs with federal, state and local governments or high school teaching. Political science majors frequently go on to graduate work in public administration and law.

Contact Eric Lewis, ext. 2251, or the Advising & Counseling Center, ext. 2213.

<i>Required courses for AAOT degree</i>	<i>credits</i>
WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-111 College Algebra or MTH-105 Introduction to Contemporary Mathematics	4

<i>Suggested courses to meet additional AAOT requirements</i>	
Philosophy Sequence	9
Arts & Letters Course (prefix different from sequence)	6
PS-201/202	6
PS-203 or PS-205	3
Social Science Courses (prefix different from sequence)	9
Lab Science Sequence	12
CS-120 Survey of Computing [C]	4
Electives (Social Science Courses recommended)	25
<i>Total: 93</i>	

Note: A minimum of 90 credits is required for an AAOT degree.

Psychology

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

A bachelor's degree in psychology prepares a student for a variety of jobs in public administration, management and personnel, and social services. Graduate work is required for a career in counseling, college teaching, or research. If graduate study is planned, a foreign language should be considered.

Contact Eric Lewis, ext. 2251, or the Advising & Counseling Center, ext. 2213.

<i>Required courses for AAOT degree</i>	<i>credits</i>
WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-111 College Algebra	4

<i>Suggested courses to meet additional AAOT requirements</i>	
Arts & Letters Sequence	9
Arts & Letters Course (PHL-102 Ethics recommended)	6
Psychology Sequence (PSY-218 recommended)	9
Social Science Courses (prefix different from sequence)	9
Lab Science Sequence (chemistry recommended)	12
Lab Science Sequence (biology recommended)	12
MTH-243/244 Introduction to Probability & Statistics	8
Electives (science, math, additional psychology recommended)	9
<i>Total:</i>	93

Note: A minimum of 90 credits is required for an AAOT degree.

Public Relations

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

A bachelor's degree in public relations prepares a student for employment in public relations, marketing, advertising and special event promotion.

Contact Linda Vogt, ext. 2310, or the Advising & Counseling Center, ext. 2213.

<i>Required courses for AAOT degree</i>	<i>credits</i>
WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-111 College Algebra	4
or MTH-105 Introduction to Contemporary Mathematics	4

<i>Suggested courses to meet additional AAOT requirements</i>	
Arts & Letters Sequence	9
J-211 Mass Media & Society or SP-212 Mass Media & Society	3
J-215 Publications Lab	1
J-216 Reporting [C] (may also be offered online)	3
J-218 Editing & Design [C]	3
J-280 Journalism/Public Relations/CWE	3
Social Science Sequence	8-9
Social Science Courses (prefix different from sequence)	6
Lab Science Sequence	12
CS-120[C]/121[C]/122 Computer Science Sequence	10
BA-101 Introduction to Business	4
BA-205 Solving Communication Problems with Technology [C]	4
BA-211 Financial Accounting I	4
BA-239 Advertising	4
BA-228 Business Presentations	3
BT-220P PageMaker	3
<i>Total:</i>	99-100

Note: A minimum of 90 credits is required for an AAOT degree.

Religious Studies

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

A bachelor's degree in religious studies gives a student a general liberal arts education with specific studies of religion and its cultural influences. A graduate degree is required to teach at the university level and study at a seminary is required for most ministerial and religion-related jobs.

Contact Eric Lewis, ext. 2251, or the Advising & Counseling Center, ext. 2213.

<i>Required courses for AAOT degree</i>	<i>credits</i>
WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-111 College Algebra	4
or MTH-105 Introduction to Contemporary Mathematics	4

<i>Suggested courses to meet additional AAOT requirements</i>	
R-101/102/103 Comparative Religions	9
PHL-102 Ethics	3
PHL-103 Critical Reasoning	3
PHL-210 Philosophy of Religion	3
HST-101/102/103 History of Western Civilization	12
PSY-200/205/219 Psychology	9
GEO-110 Introduction to Cultural & Human Geography	3
Lab Science Sequence	12
CS-120 Survey of Computing [C]	4
R-204/205/206 History of Christianity	9
Electives	10
<i>Total:</i>	96

Note: A minimum of 90 credits is required for an AAOT degree.

Science

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

A bachelor's degree in general science prepares a student for graduate work in specialized areas, to teach on the elementary or secondary level (with teacher certification), or for work in a variety of fields including environmental science.

Contact Dave Arter, ext. 2210, or the Advising & Counseling Center, ext. 2213.

<i>Required courses for AAOT degree</i>	<i>credits</i>
WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-111 College Algebra	4

<i>Suggested courses to meet additional AAOT requirements</i>	
Arts & Letters Sequence	9
Arts & Letters Course (prefix different from sequence)	3
PSY-200/205/219 Psychology	9
Social Science Courses (prefix different from sequence)	9
CH-221/222/223 General Chemistry	15
MTH-112 Trigonometry/Pre-calculus	4
CS-120 Survey of Computing [C]	4
Select one of the following options:	27-30
Physical Science Option	
PH-201/202/203 General Physics & BI-211/212/213 Biology	30
Biological Science Option	
BI-211/212/213 Biology & CH-241/242/243 Organic Chemistry	30
Earth Science Option	
PH-201/202/203 Gen. Physics & G-201/202/203 Gen. Geology	27
<i>Total:</i>	99-102

Note: A minimum of 90 credits is required for an AAOT degree.

Social Science

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

A bachelor's degree in general social science prepares a student for teaching, work in a variety of fields including environmental sciences, and graduate school in specialized areas.

Contact Eric Lewis, ext. 2251, or the Advising & Counseling Center, ext. 2213.

Required courses for AAOT degree credits

WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-111 College Algebra	4

Suggested courses to meet additional AAOT requirements

Arts & Letters Sequence	9
Arts & Letters Course (prefix different from sequence)	6
Social Science Sequence	8-9
Social Science Courses (prefix different from sequence)	9
Lab Science Sequence	12
MTH-243/244 Introduction to Probability & Statistics	8
CS-120 Survey of Computing [C]	4
Electives	18

Total: 93-94

Note: A minimum of 90 credits is required for an AAOT degree.

Sociology

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

A bachelor's degree in sociology prepares a student for entry positions in social work, personnel work, recreation, social studies teaching and business.

Contact Eric Lewis, ext. 2251, or the Advising & Counseling Center, ext. 2213.

Required courses for AAOT degree credits

WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-243 Introduction to Probability & Statistics	4

Suggested courses to meet additional AAOT requirements

ENG-107/108/109 Introduction to World Literature	9
Arts & Letters Course (prefix different from sequence)	6
SOC-204/205/206 Sociology	9
HST-101/102/103 History of Western Civilization	12
GEO-110 Introduction to Cultural & Human Geography	3
MTH-244 Introduction to Probability & Statistics	4
Lab Science Sequence	12
HST-201/202/203 History of the United States	12
Electives	10

Total: 96

Note: A minimum of 90 credits is required for an AAOT degree.

Speech/Communication

See Communications/Speech.

Contact Kelly Brennan, ext. 2726, or the Advising & Counseling Center, ext. 2213.

Speech Therapy

ONE-YEAR TRANSFER CURRICULUM

Students in this program of study should complete only their freshman year at Clackamas Community College because specialized lower division courses are not offered.

Contact advisor at four-year institution.

Contact Kelly Brennan, ext. 2726, or the Advising & Counseling Center, ext. 2213.

Suggested courses credits

WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
SP-115 Introduction to Intercultural Communications	3
MTH-111 College Algebra	
or MTH-105 Introduction to Contemporary Mathematics	4
Arts & Letters Sequence	9
Social Science Sequence	8-9
Lab Science Sequence	15

Total: 54-55

Theatre Arts

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

A bachelor's degree in theatre arts prepares a student for work in professional, educational, or community theatre as designers, actors, technicians, directors or theatre managers.

Contact David Smith-English, ext. 2725, or the Advising & Counseling Center, ext. 2213.

Required courses for AAOT degree credits

WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-111 College Algebra	
or MTH-105 Introduction to Contemporary Mathematics	4

Suggested courses to meet additional AAOT requirements

TA-141/142/143 Acting	9
ENG-105 Introduction to Literature: Drama	3
ART (any course with ART prefix)	3
HST-101/102/103 History of Western Civilization	12
Social Science Courses (prefix different from sequence)	6
BI-101/102/103 General Biology	12
CS-120 Survey of Computing [C]	4
CS-121 Computer Applications [C]	3
TA-241 Shakespeare for Actors	3
TA-242 Scene Study & Theatre History	3
TA-243 Play Direction	3
TA-111/112/113 Fundamentals of Technical Theatre	12
Select at least five credits from the following:	5
TA-101/102/103 Appreciation of Theatre	9
TA-198 Individual Studies: Acting/Directing	1-3
TA-153 Rehearsal & Performance	1-3
TA-211/212/213 Advanced Technical Theatre	4-12

Total: 97

Note: A minimum of 90 credits is required for an AAOT degree.

Urban Studies & Planning

ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

Contact Eric Lewis, ext. 2251, or the Advising & Counseling Center, ext. 2213.

<i>Required courses for AAOT degree</i>	<i>credits</i>
WR-121/122/123 or 227 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-111 College Algebra	4

Suggested courses to meet additional AAOT requirements

Arts & Letters Sequence	9
Arts & Letters Course (prefix different from sequence)	3
Social Science Sequence	8-9
Social Science Courses (prefixes different from sequence)	6
Lab Science Sequence	12-15
Additional Science or Math Courses	3
CS-120 Survey of Computing [C]	4
Electives	29-31
<i>Total: 93-99</i>	

Note: A minimum of 90 credits is required for an AAOT degree.

Veterinary Medicine

PRE-PROFESSIONAL PROGRAM ASSOCIATE OF ARTS OREGON TRANSFER DEGREE

A bachelor's degree, when completed with a science emphasis, prepares a student to apply to veterinary school.

Contact Dave Arter ext. 2210, or the Advising & Counseling Center, ext. 2213.

<i>Required courses for AAOT degree</i>	<i>credits</i>
WR-121/122/123 English Composition	9
Health/Physical Education Requirement	3
SP-111 Public Speaking	3
MTH-112 Trigonometry/Pre-calculus	4

Suggested courses to meet additional AAOT requirements

Arts & Letters Sequence	9
Arts & Letters Course (prefix different from sequence)	6
Social Science Sequence	8-9
Social Science Courses (prefix different from sequence)	6
CH-221/222/223 General Chemistry	15
PH-201/202/203 General Physics	15
BI-211/212/213 Biology	15
CH-241/242/243 Organic Chemistry	12
CS-120 Survey of Computing [C]	4
<i>Total: 109-110</i>	

Note: A minimum of 90 credits is required for an AAOT degree.

Transfer & Articulation Agreements

PORTLAND STATE UNIVERSITY

CCC/PSU Co-Admission

Clackamas Community College has a co-admission program with Portland State University which provides a dual admission to both institutions. PSU advisors work with Clackamas faculty, advisors and students to provide educational planning in support of a four year degree at PSU. CCC students have the opportunity to take the PSU Inquiry classes at CCC. Scholarships and financial aid are also available. For more information contact Don Hartssock, ext. 2542 or ext. 2599.

CCC Building Construction Technology

Articulation agreement with PSU Department of Architecture. For more information contact Bob Topping, ext. 2667.

CCC Instructional Assistant

Articulation agreement with the PSU Bilingual Pathway's program. For more information contact Paula Hamm, ext. 2804.

OREGON STATE UNIVERSITY

CCC Technology Education

Articulation agreement with OSU Professional Technical Teacher Preparation program. For more information contact Glenn Ferris, ext. 2583.

CCC Horticulture

Up to 45 horticulture credits may be accepted at OSU for a general agriculture bachelor's degree program. For more information contact Elizabeth Howley, ext. 2389.

OREGON HEALTH SCIENCES UNIVERSITY

CCC/OHSU Provisional Admission

Students admitted to the Nursing Program may also be provisionally admitted into OHSU's RN/BS program. For more information contact Lisa Fithian, ext. 2272.

OREGON INSTITUTE OF TECHNOLOGY

CCC Drafting, Electronics Systems Technology*, Manufacturing and Microelectronics Systems Technology

Course by course approval agreement is established with OIT in support of educational planning and transfer into a four year program. For more information contact Terence Shumaker, ext. 2365 or Scott Giltz, ext. 2921.

* Pending state approval.

MARYLHURST UNIVERSITY

CCC Building Construction Technology/Construction Project Management Concentration

For more information contact Bob Topping, ext. 2667.

Professional/Technical Programs

Acquire Practical Marketable Skills

PROFESSIONAL/TECHNICAL PROGRAMS

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 pages ???-???

The certificate and degree requirements in this catalog are valid for five years following the summer term of 2002. When you're ready to graduate, you may choose to meet the requirements of either the catalog in use during the first term you attended CCC, or the requirements in the most current catalog at the time you graduate.

Associate of Applied Science

Designed for the student with a specific career goal who wants to pursue a degree. For specific program requirements, see "Professional/Technical Programs" in this catalog or see your department faculty advisor or a staff member in the Advising & Counseling Center.

REQUIREMENTS

- Complete a minimum of 93 credits with a cumulative GPA of 2.0 or above (note: some professional/technical programs require more than 93 credits). At least 24 credits must be taken at CCC (CPL credit does not satisfy this requirement).
- Complete a minimum of 18 General Education credits to include communication, computation, human relations and physical education/health (see *Required Areas of Concentration for General Education Requirements*, page 49).
- Satisfy the Computer Literacy Requirement (page 48).
- Complete the Cooperative Work Experience requirement.
- Complete required course work as specified in the program of study for one of the following programs:

Accounting
Automotive Service Technology
Building Construction Technology
Business Technology

CAD/CAM (Computer-Aided Drafting/
Computer-Aided Manufacturing)
Collision Repair Technology
Computer Application Specialist
Corrections
Criminal Justice
Drafting Technology
Drafting Technology, Architectural Option
eBusiness Administration
Electronics Systems Technology*
Emergency Management
Horticulture
Industrial Technology (Apprenticeship)
Manufacturing Technology
Marketing & Management
Microelectronics Systems Technology
Network & Microcomputer Specialist
Nursing
Water & Environmental Technology

Note: Suggested programs of study may contain courses with prerequisites. Check course descriptions.

* Pending official approval

Associate of General Studies

Designed for the student seeking a more flexible degree program that can be completed in two years. If you are considering a four-year degree, it is recommended that you meet with an advisor to see whether the AAOT or General Studies degree is more appropriate.

REQUIREMENTS

- Complete a minimum of 93 credits with a cumulative GPA of 2.0 or above (note: some professional/technical programs require more than 93 credits). At least 24 credits must be taken at CCC (CPL credit does not satisfy this requirement).
- Complete 24 credits of coursework having the same letter prefix or within the same department.
- Complete a minimum of 18 General Education credits to include communication, computation, computer literacy, human relations and physical education/health (see *Required Areas of Concentration for General Education Requirements*, page 49).
- Call ext. 2213 for assistance or drop by the Advising & Counseling Center located in the Bill Brod Community Center.

Professional/Technical Certificate of Completion

Designed for the student who wants a career pathway beginning with a specific job training program leading to a certificate of completion. For specific program requirements, see the "Professional/Technical Programs" section of this catalog, or see your faculty advisor or a staff member in the Advising & Counseling Center.

REQUIREMENTS

- Complete required course work with a cumulative GPA of 2.0 or above from one of the following programs, as specified in the programs of study. At least 12 credits must be taken at CCC (CPL credit does not satisfy this requirement).
- Complete a minimum of nine credits in communication, computation and human relations (see *Required Areas of Concentration for General Education Requirements*, page 49).
- Satisfy the Computer Literacy Requirement (page 48).
- Complete the Cooperative Work Experience requirement.
- Complete required course work as specified in the program of study for one of the following programs:

Accounting Clerk
 Building Construction Technology
 Business Management
 Collision Repair/Refinishing
 Computer Application Specialist
 Corrections/Juvenile
 Early Childhood Education & Family Studies*
 eBusiness Administration
 Electronics Systems Technology*
 Emergency Medical Technology
 Gerontology
 Horticulture
 Instructional Assistant
 Manufacturing Technology
 Marketing
 Medical Assistant
 Microelectronics Systems Technology
 Network & Microcomputer Specialist
 Occupational Skills Training
 Office Assistant
 Practical Nursing
 Water & Environmental Technology

* Pending official approval.

Note:

- Suggested programs of study may contain courses with prerequisites. Check course descriptions.
- Up to 12 credits of professional/technical coursework can be included in an AAOT degree.

Earning Multiple Degrees/Certificates

Clackamas offers:

- Associate of Arts Oregon Transfer degree (AAOT)
- Associate of General Studies
- Associate of Applied Science (Professional/Technical) degrees
- Certificates of Completion

To earn more than one degree/certificate you must:

- file a separate petition for each degree/certificate
- satisfy the requirements for each program of study
- satisfy all other institutional requirements

For more information contact the Advising & Counseling Center, ext. 2213.

*See the Advising & Counseling Center
for more information on:*

- up-to-date curriculum changes and career opportunities
- current class information, including times, days, locations, instructors, fees, and how to register
- admissions information and specific requirements for all Oregon public and private universities

Continued

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

General Education Core Requirements

ASSOCIATE OF APPLIED SCIENCE ASSOCIATE OF GENERAL STUDIES

A minimum of 18 credits is required from the following
Required Areas of Concentration for General Education:

- 1 course in **Communication**
- 1 course in **Computation**
- 1 course in **Human Relations**
- 1 course in **Physical Education/Health**

CERTIFICATE OF COMPLETION (ONE ACADEMIC YEAR IN LENGTH OR MORE)

A minimum of nine credits is required from the following
Required Areas of Concentration for General Education:

- 1 course in **Communication**
- 1 course in **Computation**
- 1 course in **Human Relations**

Required Areas of Concentration for General Education Requirements

Communication

WR-101, 121*, 122*, 123*, 227*

Computation

Computer Science

CS-122, 133VB, 161,162, 260

Mathematics

MTH-050, 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, 201, 202, 203

Political Science

PS-203, 205

Psychology

PSY-101, 110, 142, 200, 205, 215, 219, 221, 231, 240

Sociology

SOC-204, 205, 206, 223, 225, 230

Speech

SP-100, 115, 126, 218

Physical Education/Health

Health

HE-151, 204, 205, 207, 249, 250, 251, 252, 255, 261

Physical Education

HPE-295

PE-131, 185, 194, 260, 292, 293, 294

Additional Courses for General Education Requirements

Business

BA-131, BT-160, 176

Computer Science

CS-120, 121

Humanities/Arts

Art: ART-115, 116, 117, 204, 205, 206

Foreign Language:*

ASL-101, 102, 103

FR-101, 102, 103, 201, 202, 203

GER-101, 102, 103, 201, 202, 203

JPN-101, 102, 103, 201, 202, 203

SPN-101, 102, 103, 201, 202, 203

Humanities:

HUM-170-234

J-211, 216, 218

MUP (100 level and above)

Literature: ENG-104, 105, 106, 107, 108, 109, 116, 121, 201, 202, 203, 204, 205, 206, 210, 250, 251, 252, 253, 254, 255, 266, 275

Music: MUS-111*, 112*, 113*, 201, 202, 203, 205, 206

Philosophy: PHL-101, 102, 103, 205, 210, 213, 215

Religion: R-101, 102, 103, 204, 205, 206, 207, 208, 209

Speech: SP-111, 126, 211, 212, 218, 219

Theatre Arts: TA-141, 142, 143, 211, 213, 241, 242, 243

Writing: WR-241, 242, 243, 244, 245, 246, 247

Nutrition

FN-110, 225

Reading/Study Skills

EL-111, RD-115

Social Science Inquiry

SSC-150-234

Science

ASC-200, 201, 202

GE-101A, GE-101B, GE-102, GE-115, GE-211, GE-212, GE-213

TPH-100

All BI, BOT, CH, ESR, G, GS, PH, SC and Z numbers

(except 199 and 299)

Social Science

Anthropology: ANT-101, 230, 231, 232

Business: BA-218

Economics: EC-115, 201, 202, 203, 216, 230

Education: ED-121/122

Geography: GEO-100, 110, 120, 121, 122, 130, 220

History: HST-204, 205, 206, 238, 239, 240, 251, 252, 253

Political Science: PS-201, 202, 204, 206, 225, 251, 252, 253

Psychology: PSY-216, 218, 238

Sociology: SOC-231, 232

Women's Studies: WS-101

* indicates course sequences which *must* be taken in order

Computer Literacy Requirements

ALL DEGREE AND CERTIFICATE PROGRAMS

You must satisfy CCC's computer literacy requirements in order to receive a degree or certificate of completion. The requirement may be satisfied by:

1) passing a competency examination (check with Testing/Assessment, ext. 2269)

OR

2) enrolling in and passing one of the classes listed below.

COURSES WHICH MEET THE COMPUTER LITERACY REQUIREMENT:

ART-225	Computer Graphics I [C]
ART-226	Computer Graphics II [C]
ART-227	Computer Graphics III [C]
BA-131	Introduction to Business Computing [C]
BA-205	Solving Communication Problems with Technology [C]
BC-100	Construction Orientation: Overview of Construction Industry [C]
BC-107	Construction Career Portfolio [C]
BC-112	Construction Specification Fundamental Practices [C]
BC-121	Professional Computing for Construction [C]
BC-201	Project Management I: Developing Project Expectations [C]
BC-202	Project Management II: Managing Project Expectations [C]
BC-203	Project Management III: Evaluating Project Expectations [C]
BC-210	Construction Project Model Development [C]
BT-120	Personal Keyboarding [C]
BT-150	WordPerfect for Windows [C]
BT-160	MS Word for Windows [C]
BT-161	Intermediate Microsoft Word [C]
BT-170	Access [C]
BT-176	Excel for Windows [C]
BT-262	Advanced Microsoft Word [C]
CDT-104	Professional Computing Basics [C]
CS-091	Computers for New Users II [C]
CS-120	Survey of Computing [C]
CS-121	Computer Applications [C]
CS-161	Computer Science I [C]
HOR-222	Horticultural Computer Applications [C]
HUM-170	Metamorphoses [C]
HUM-171	Metamorphoses [C]
HUM-172	Metamorphoses [C]
J-215	Publications Lab [C]
J-216	Reporting [C]
J-218	Editing & Design [C]
J-226	Electronic Newspaper Production [C]
MFG-109	Computer Literacy for Technicians [C]
MFG-209	Advanced Computer Skills for Manufacturing [C]
MUS-101L	MIDI Lab [C]
MUS-102L	MIDI Lab [C]
MUS-103L	MIDI Lab [C]
MUS-105	Music Appreciation [C]
MUS-111L	MIDI Lab [C]
MUS-112L	MIDI Lab [C]
MUS-113L	MIDI Lab [C]
MUS-120	Finale I [C]

MUS-121	Finale II [C]
MUS-122	Finale III [C]
MUS-124	Jazz Arranging/Finale [C]
MUS-143	MIDI Sequencing [C]
MUS-211L	MIDI Lab [C]
MUS-212L	MIDI Lab [C]
MUS-213L	MIDI Lab [C]
SKH-030	Computer Access I [C]
SKH-035	Computer Access II [C]
SP-111*	Public Speaking
SSC-150	The Columbia Basin [C]
SSC-151	The Columbia Basin [C]
SSC-152	The Columbia Basin [C]
SSC-160	Faith & Reason [C]
SSC-161	Faith & Reason [C]
SSC-162	Faith & Reason [C]
WR-121*	English Composition
WR-122*	English Composition
WR-165	Writing on the Web [C]
WR-227	Technical Report Writing [C]
WR-246	Editing & Publishing [C]

*Certain sections only meet the computer literacy requirements.

Courses Which Do Not Transfer

Many CCC courses carry college transfer credit and, when transferred to a four-year institution, will normally apply toward higher degrees.

The following courses will *not* transfer:

- courses with one- or two-digit course numbers, or which begin with "0"
- courses with the following prefixes:

ASE	GR	SBM
CW	MM	SKH
GED	PIE	SKO

WORKfirst Training Programs

WORKfirst programs provide extra training to learn a new job or increase your skills in the field you're in.

The following WORKfirst programs are available:

- Auto Body Specialist
- Construction Specialist
- Manufacturing Specialist
 - CNC Operator*
 - Welding Technologist*
- Office Specialist
- Production/Warehouse Specialist
- Semiconductor Operator

CONSTRUCTION SPECIALIST

Construction Specialists are in great demand. Every business within the Construction industry uses entry level individuals to order, prepare, install and deliver construction products. The course will include introduction to computers, basic construction math, identification and use of hand and power tools, basic construction components, standard materials, electrical devices, and plumbing and mechanical components, material production, health and fitness for industry, and work readiness skills.

MANUFACTURING SPECIALIST

CNC Operator

Computer Numerical Control (CNC) operators enjoy challenging jobs producing close-tolerance parts for aerospace, high-tech, medical and the sporting goods industries. This program will teach you how to run and understand a CNC machine tool. Most companies train new employees on their particular brands of equipment, utilizing the foundation of skills gained through WORKfirst. Literally every machine shop has at least one CNC machine tool on their shop floor.

Welding Technologist

(area of concentration)

Enroll now in a WORKfirst Training program designed to provide entry-level skills that will help you secure work with a minimum of training. In the welding technologist program, students will learn the basic skills necessary to function in a fabrication environment as an apprentice welder. Coursework includes theory and practical instruction covering shop process safety, oxyfuel cutting, stick and wirefeed welding processes. Measurement, basic maintenance and job exploration are also covered. No prior welding experience is necessary.

OFFICE SPECIALIST

Intensive, business job-training program which meets 6.5 hours per day, four days per week for two terms. Provides skill development required for administrative support positions in business. Class size is small and there is heavy emphasis on hands-on learning.

PRODUCTION/WAREHOUSING SPECIALIST

The Production/Warehousing Specialist program includes introduction to computers, their software applications Relating to inventory control systems, cataloging, stocking and order points, warranties, returns, and customer service files. The course will also cover purchasing, tracking and shipping procedures. Wholesale distribution is the network that keeps goods flowing throughout our economy. Inventory control specialists are key factors in that process. Training will include forklift and 10-key. No prior experience is necessary.

SEMICONDUCTOR OPERATOR

The Semiconductor Operator program, a WORKfirst Training Program, focuses on the basic skills required for entry-level operator, processor and assembler jobs in the Portland high-tech industries. Specialized curriculum covers clean room process, techniques and clothing, manufacturing of silicon wafer and computer chips, beginning computer skills and applications, a basic math review including calculator use, workplace safety, workplace readiness and team building. Communication, interviewing skills and statistical process control procedures. No prior experience is necessary.

For more information and how to get started call Clackamas Community College at 503-657-6958 ext. 2163 or ext. 2409.

Financial assistance is available for all WORKfirst Programs.

Professional/Technical Programs

Accounting	52
Accounting Clerk	52
Automotive Service Technology	53
Building Construction Technology	54
Business Management	55
Business Technology	55
Collision Repair/Refinishing	56
Collision Repair Technology	56
Computer-Aided Drafting/Computer-Aided Manufacturing (CAD/CAM)	57
Computer Application Specialist	57
Corrections	58
Corrections/Juvenile	59
Criminal Justice	59
Drafting Technology	60
Early Childhood Education & Family Studies*	61
eBusiness Administration	62
eBusiness Administration	62
Electronics Systems Technology	63
Emergency Management	64
Emergency Medical Technology	64
Employment Skills Training	64
Gerontology	65
Horticulture	66
Industrial Technology	67
Instructional Assistant	68
Manufacturing Technology	68
Marketing & Management	69
Marketing	70
Medical Assistant	70
Microelectronics Systems Technology	71
Network & Microcomputer Specialist	72
Nursing	72
Occupational Skills Training	73
Office Assistant	74
Real Estate	74
Supervisory Training	74
Water & Environmental Technology	75
WorkFirst Training	50
■ Auto Body Specialist	
■ Auto Body Refinishing Specialist	
■ Auto Parts Specialist	
■ Construction Supply Specialist	
■ Manufacturing Specialist	
<i>CNC Operator</i>	
<i>Welding Technologist</i>	
■ Office Specialist	
■ Semiconductor Operator	

* Pending official approval

Accounting

ASSOCIATE OF APPLIED SCIENCE DEGREE

The accounting program at Clackamas emphasizes developing an advanced understanding of accounting principles. The curriculum prepares the student to be able to record day-to-day financial transactions and to prepare summary statements of business conditions. The courses offered emphasize 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 accounting program at CCC 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 Linfield, George Fox and Marylhurst.

CAREERS

Career opportunities may be found as a bookkeeper, accounting clerk, payroll clerk, accounting associate, cost accountant, financial accountant or tax accountant. Jobs are available in business, industry, government agencies, service industries and banks.

For information contact John Olds, ext. 2408.

ACCOUNTING ASSOCIATE DEGREE: 1ST YEAR

FALL TERM		CREDITS
BA-101	Introduction to Business	4
BA-211	Financial Accounting I	4
BT-104*	Business Math	3
BT-120	Personal Keyboarding [C]	2
WR-121	English Composition	3

WINTER TERM

BA-131	Introduction to Business Computing [C]	4
BA-156	Applied Economics	3
BA-212	Financial Accounting II	4
BA-251	Office Management	3
BT-109	Payroll Accounting	3

SPRING TERM

BA-205	Solving Communication Problems w/Tech. [C]	4
BA-213	Decision Making with Accounting Information	4
BA-226	Introduction to Business Law I	4
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	Physical Education/Health	3
SP-111	Public Speaking	3

WINTER TERM

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

SPRING TERM

BA-218	Personal Finance	3
BA-225	Business Report Writing	3
BA-249	Auditing	3
BA-280	Business/CWE	3
BT-105	Computerized Accounting	3

Minimum credits required for degree 95

* For this degree, this course meets the General Education Computation requirement.

Accounting Clerk

CERTIFICATE

This certificate program prepares students to perform full-cycle 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. Typical duties include completing journal entries, assisting with tax, audit and other accounting procedures, preparing reports, communicating results and general office responsibilities.

Full-cycle proprietorship, partnership and corporate journalizing are covered, along with posting, preparation of period-end worksheets, entries, financial statements and payroll.

CAREERS

Career opportunities may be found in bookkeeping and accounting firms, accounting departments at all kinds of businesses, and for small and medium-sized service companies.

For information contact John Olds, ext. 2408.

ACCOUNTING CLERK CERTIFICATE

FALL TERM		CREDITS
BA-101	Introduction to Business	4
BA-211	Financial Accounting I	4
BT-104*	Business Math	3
BT-120	Personal Keyboarding [C]	2
WR-121	English Composition	3

WINTER TERM

BA-131	Introduction to Business Computing [C]	4
BA-156	Applied Economics	3
BA-212	Financial Accounting II	4
BA-251	Office Management	3
BT-109	Payroll Accounting	3

SPRING TERM

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

Minimum credits required for certificate 52

* For this degree, this course meets the General Education Computation requirement.

Automotive Service Technology

ASSOCIATE OF APPLIED SCIENCE DEGREE INTERNSHIP PROGRAM

Auto technicians maintain and repair passenger cars and light trucks. The work involves repairing air conditioning systems, engine and transmission rebuilding,

- Test center for the National Institute for Automotive Service Excellence (ASE)
- ASE certified instructors
- Master Certification from the National Automotive Technician's Education Foundation (NATEF)
- AAA approved training center

front-end repair and alignment, brake service, starting and charging system repair, and the diagnosis and repair of electronic engine controls and safety systems.

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.

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 course work. Clackamas Community College, in cooperation with Umpqua Community College and Clark College, provide a Toyota dealership internship program.

CAREERS

While training is specific to car and light truck repair, entry-level automotive technicians also find employment in equipment sales, service management, education, RV and marine repair, truck repair, lift truck service and other related fields.

PREREQUISITES

MTH-020 Fundamentals of Arithmetic or equivalent competency. Students whose placement scores indicate a need for RD-012 Developmental Reading must earn at least one RD-012 credit per term to be eligible for enrollment the following term.

For information contact Ray Conklin, ext. 2320.

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		CREDITS
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		CREDITS
AM-123	General Auto Repair III	3
AM-130	Brake Systems (co-requisite: AM-131)	4
AM-131	Chassis Systems (co-requisite: 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		CREDITS
AB-112	Collision Repair Welding I	2
AM-228	Service Shop Management	4
AM-243	Fuel Systems (prerequisite or co-requisite:AM-129)	7
— —	General Education Elective (see page 49)	3

SPRING TERM		CREDITS
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. Light construction procedures, methods, standards and techniques are explored. The one-year certificate program is a performance advancement program designed to assist a student in pursuing a career option. Second-year students focus on the essential elements of equity driven project management that can be directly applied in the field. Students who meet state requirements may apply to an area trade apprenticeship program.

CAREERS

Skilled workers in the construction infrastructure trades are in high demand. The Building Construction certificate prepares students 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 prepares students for construction positions as estimators, schedulers, project managers, professional assistants, superintendents, site supervisors, contract compliance officers or general contractors.

For information contact Bob Topping, ext. 2667.

ARCHITECTURAL PROJECT MANAGEMENT (PSU TRANSFER AGREEMENT)

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

CONSTRUCTION PROJECT MANAGEMENT (MARYLHURST TRANSFER AGREEMENT)

This program enables students who attend CCC to meet the requirements to transfer with Junior standing to Marylhurst University for a degree emphasis in Construction Project Management.

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	
or WR-121	English Composition	3
MTH-050	Technical Mathematics I	
or MTH-065*	Algebra II	3 or 4
— —	Building Construction Electives	8

SPRING TERM

BC-107	Construction Career Portfolio [C]	6
— —	Human Relations Electives (see page 49)	3
— —	General Education Electives (see page 49) (CS-120 recommended)	3
— —	Building Construction Electives	6

Minimum credits required for certificate 48-49

BUILDING CONSTRUCTION TECHNOLOGY ASSOCIATE DEGREE: 1ST YEAR

Complete certificate program.*

*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: 2ND YEAR

FALL TERM		CREDITS
BC-201	Project Management I [C] or Building Construction/PSU transfer electives	12
— —	PE/Health Electives (see page 49) (HE-252 recommended)	3

WINTER TERM

BC-202	Project Management II [C] or Building Construction/PSU transfer electives	12
— —	General Education Electives (see page 49)	3

SPRING TERM

BC-203	Project Management III [C] or Building Construction/PSU transfer electives	12
BC-280	Construction Projects/CWE	6

Minimum credits required for degree 96

BUILDING CONSTRUCTION ELECTIVES

100 LEVEL ELECTIVES:		CREDITS
BC-104	Basic Carpentry	6V
BC-105	Basic Electricity	6V
BC-106	Basic Plumbing	6V
BC-108	Basic Concrete and Masonry	6V
BC-109	Basic Mechanical Systems	6V
BC-110	Interior Surface Systems	6V
BC-111	Basic Interior Finish	6V
BC-112	Construction Specifications [C]	12V
BC-113	Construction Spec Administration	12V
BC-114	Basic Estimating	6V
BC-115	Basic Scheduling	6V
BC-121	Professional Computing for Construction	4V
BC-170	Industrial Performance, Health & Safety I	12V
BC-180	Building Construction Tech./CWE(certificated)	6V

200 LEVEL TRANSFER ELECTIVES*:

BC-204	Residential Building Codes	12V
BC-205	Commercial Building Codes	12V
BC-206	Construction Site Inspection	12V
BC-210	Construction Project Scheduling: Advanced	12V
BC-211	Construction Site Management	12V
BC-270	Industry Performance, Health & Safety II	12V
BC-286	Advanced Construction Applications	12V

*These credits transfer to PSU as 6 credits. Consult with an advisor concerning the transfer requirements of the specific advanced program or school.

Business Management

CERTIFICATE

This program covers basic management and leadership skills, motivation, situational analysis, ethics, work flow analysis, ergonomics, personality and human relations, communications, technological innovations, and adapting to change.

Typical duties include budgeting, scheduling, planning, organizing, critical thinking, decision making, and managing scarce and diminishing resources.

CAREERS

Career opportunities for entry-level employees include management-training positions in financial institutions, small and medium-sized retail and service companies.

For information call John Olds, ext. 2408, or Joan Ryan, ext. 2363.

BUSINESS MANAGEMENT CERTIFICATE

FALL TERM	CREDITS
BA-101 Introduction to Business	4
BA-211 Financial Accounting I	4
BT-104* Business Math	3
BT-120 Personal Keyboarding [C]	2
WR-121 English Composition	3

WINTER TERM

BA-131 Introduction to Business Computing [C]	4
BA-156 Applied Economics	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	3
BA-280 Business/CWE	3

Minimum credits required for certificate 51

* For this degree, this course meets the General Education 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 general education requirements, industry standard computer programs, and more advanced business administration courses.

CAREERS

Career opportunities may be found as administrative assistants, legal assistants, legal secretaries, medical secretaries, receptionists, office managers, office assistants, word processors and transcriptionists.

For information contact Tanya Patrick, ext. 2426.

BUSINESS TECHNOLOGY ASSOCIATE DEGREE: 1ST YEAR

FALL TERM	CREDITS
BA-101 Introduction to Business	4
BT-104* Business Math	3
BT-122 Keyboarding Skill Building	2
BT-124 Business English I	3
BT-160 Microsoft Word [C]	3

WINTER TERM

BA-285 Human Relations in Business	4
BT-115 Intro. to General Accounting & Bookkeeping	3
BT-125 Business English II	3
BT-161 Intermediate Microsoft Word [C]	3
BT-176 Excel	3

SPRING TERM

BA-218 Personal Finance	3
BT-170 Access [C]	3
BT-240 Filing Records Management	3
BT-262 Advanced Word	3
WR-121 English Composition	3

BUSINESS TECHNOLOGY ASSOCIATE DEGREE: 2ND YEAR

FALL TERM

BA-131 Introduction to Business Computing [C]	4
BA-224 Human Resource Management	3
BA-226 Introduction to Business Law I	4
SP-111 Public Speaking	3
— — Elective	3

WINTER TERM

BA-156 Applied Economics	3
BA-205 Solving Communication Problems w/Tech. [C]	4
BA-251 Office Management	3
BT-220P Desktop Publishing I: PageMaker	3
HE-249 Mental Health	3
or HPE-295 Health & Fitness for Life	3

Continued

SPRING TERM

BA-225	Business Report Writing	3
BA-280	Business/CWE	6
BT-190	Business Graphics	3
BT-191	Document Design & Publishing	3

Minimum credits required for degree (requirements + electives) 94

* For this degree, this course meets the General Education Computation requirement.

RECOMMENDED ELECTIVES:

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

Collision Repair/Refinishing

CERTIFICATE

Refinishing technicians prepare vehicles for paint, mix and tint paint, do spot repairs and overall refinishing. Coursework covers the use of urethane systems including

- A.S.E certified instructors
- I-Car gold class training facility and program
- Equipment and automotive paint company demonstration and training site
- National Automotive Technicians' Education Foundation (NATEF) certified

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.

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.

CAREERS

Career opportunities in auto refinishing may include work with independent repair shops, auto dealerships, paint suppliers, heavy equipment dealers or truck painting facilities.

For information contact David Bradley, ext. 2628.

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

Minimum credits required for certificate 63

Collision Repair Technology

ASSOCIATE OF APPLIED SCIENCE DEGREE

Collision repair technicians repair or replace damaged panels, parts and frames on both unibody and conventional frame vehicles. Coursework covers advanced

- Modern shop facility utilizing advanced frame repair machines
- National Automotive Technician's Education Foundation (NATEF) certified
- InterIndustry Conference for Auto Collision Repair (I-CAR) gold class training facility and program
- I-CAR "Advance Tech" curriculum is used exclusively
- Automotive Service Excellence (A.S.E.) Certified Instructors

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.

CAREERS

Career opportunities are similar to those for collision repair/refinishing.

For information contact Wayne Austen, ext. 2249.

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
— —	General Education Elective (see page 49)	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
— —	General Education Elective (see page 49)	3

Minimum credits required for degree (requirements + electives) 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). Students completing this degree are able to provide a company with the needed support from product design through manufacturing. Coursework emphasizes computer-aided mechanical drafting, machine tool fundamentals, computer numerical control (CNC), and computer-aided manufacturing.

For information contact Mike Mattson (Manufacturing) ext. 2483, or Terence Shumaker (Drafting) ext. 2365.

COMPUTER-AIDED DRAFTING/COMPUTER-AIDED MANUFACTURING (CAD/CAM) 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]	2
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
THIRD TERM		
CDT-107	Computer Aided Drafting III	4
CDT-108**	CAD 3-D	3
MFG-112	Machine Tool Fundamentals II	6
MTH-085	Technical Mathematics III	3
FOURTH TERM		
CDT-109a	Project Drafting I for CAD/CAM	2
CDT-110	Kinematics Drafting	2
CDT-111	Geometric Dimensioning & Tolerancing	3
MFG-201	CNC Programming I	4
MFG-204	Computer-Aided Manufacturing I	4
PSY-101	Human Relations	3

FIFTH TERM

HE-252	First Aid/CPR	3
MFG-113	Machine Tool Fundamentals III	6
MFG-202	CNC Programming II	4
MFG-205	Computer-Aided Manufacturing II	4

SIXTH TERM

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

Minimum credits required for degree: MFG-209 option 97

* MFG-209 Advanced Computing for Manufacturing, can be substituted for CDT-104.

** CDT-108A Introduction to Solid Modeling, can be substituted for CDT-108.

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**

The Computer Application Specialist program prepares students for technical positions using and supporting computer software, with a broad background that includes operating systems, web development, spreadsheet, database, and programming software. Positions could include software installation and maintenance, user support and training, or web development.

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 Survey of Computing (CS-120), Writing 95, and Math 65. This program is an open program, meaning that students may take any class in the program for which they have completed the prerequisite.

CAREERS

Career opportunities include web developers, database developers, software trainers, software installation and maintenance engineers, computer applications specialists, client support representatives, customer service engineers, help desk technicians, or software consultants.

For information contact Linda Anderson, ext. 2539.

Continued

COMPUTER APPLICATION SPECIALIST CERTIFICATE

FALL TERM		CREDITS
CS-121	Computer Applications [C]	3
CS-160	Computer Tech Orientation	2
CS-225	Computer End-User Support	3
CS-140W	Operating Systems I: Windows	4
MTH-092	Math for Computer Technicians	4

WINTER TERM

BT-220P	Desktop Publishing I: PageMaker	3
or BT-220Q	Desktop Publishing I: Quark XPress	
CS-125H	Website Design & HTML	3
CS-135W	Advanced Word Processing	3
CS-278	Data Communications	3
WR-101	Communications Skills: Occupational Writing	3

SPRING TERM

BA-101	Introduction to Business	4
CS-135I	Advanced Internet Applications	3
CS-280	Computer Science/CWE	3
CS-135S	Advanced Spreadsheet	3
PSY-101	Human Relations	3 or 4
or BA-285	Human Relations in Business	

Minimum credits required for certificate 47-48

COMPUTER APPLICATION SPECIALIST**ASSOCIATE OF APPLIED SCIENCE DEGREE: 1ST YEAR**

Complete certificate program.

COMPUTER APPLICATION SPECIALIST**ASSOCIATE OF APPLIED SCIENCE DEGREE: 2ND YEAR**

FALL TERM		CREDITS
ART-115	Basic Design	3
CS-140U	Operating Systems I: Linux/Unix	3
CS-133VB	Visual Basic I	3
CS-135DB	Advanced Database	3
— —	Focus Area	3-6

WINTER TERM

CS-195	Website Technologies I	3
CS-244	Systems Analysis	3
HE-252	First Aid/CPR	3
or HPE-295	Health & Fitness for Life	
— —	Elective	3
— —	Focus Area	3-6

SPRING TERM

BA-250	Introduction to Small Business	3
CS-280	Computer Science/CWE	6
CS-235	Visual Basic for Applications	3
— —	Focus Area	3-6

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

ADDITIONAL COURSES FROM FOCUS AREA**CREDITS**

Complete all courses from one of the following Focus Areas 10-12

WEB PROGRAMMING

CS-133S	Web Development I	3
CS-233S	Web Development II	3
CS-234S	Web Development III	3
CS-295	Website Technologies II	3

WEB DEVELOPMENT

WR-165	Writing on the Web	3
ART-225	Computer Graphics I [C]	3
ART-226	Computer Graphics II [C]	3
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

DATABASE PROGRAMMING

CS-233VB	Visual Basic II	3
CS-234VB	Visual Basic III	3
CS-275	Database Programming	4

Corrections

ASSOCIATE OF APPLIED SCIENCE DEGREE

Clackamas Community College offers an associate degree in Corrections. The two-year associate degree provides the skills and knowledge needed to qualify for a job in a federal, state or local corrections system.

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

CAREERS

Opportunities include positions in adult and juvenile probation/parole, work release, jail and detention, a prison system, electronic monitoring, and counseling offenders. Corrections professionals are usually qualified to move into other areas of law enforcement or social service.

For information contact Dick Ashbaugh, ext. 2237.

CORRECTIONS ASSOCIATE DEGREE: 1ST YEAR

FALL TERM		CREDITS
CJA-110	Introduction to Law Enforcement	3
CJA-130	Introduction to Corrections	3
HPE-295	Health & Fitness for Life	3
PSY-221	Introduction to Counseling	3
WR-121	English Composition	3

WINTER TERM

CJA-120	Judicial Process	3
CJA-134	Correctional Institutions	3
SP-111	Public Speaking	3
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	
SP-115	Introduction to Intercultural Communication	3
— —	Elective	3

CORRECTIONS ASSOCIATE DEGREE: 2ND YEAR

FALL TERM		CREDITS
CJA-122	Oregon Law	3
CJA-132	Parole & Probation	3
CJA-232	Corrections Casework	3
HE-207	Stress Management	1
PHL-102	Ethics	3
PSY-101	Human Relations	3

WINTER TERM

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

SPRING TERM

CJA-230	Juvenile Corrections	3
CJA-280	Criminal Justice/Corrections/CWE	6
CS-120	Survey of Computing [C]	4
PS-203	U.S. Government & Local Institutions	3

Minimum credits required for degree 93

RECOMMENDED ELECTIVES:

BT-120	Personal Keyboarding [C]
PSY-200	Psychology as a Natural Science
PSY-219	Introduction to Abnormal Psychology
SOC-205	Social Stratification & Social Systems
SOC-225	Social Problems
SOC-204	Introduction to Sociology
SPN-111	Spanish Conversation

Corrections/Juvenile

CERTIFICATE

The Corrections/Juvenile certificate is a one-year program developed in cooperation with the Oregon Youth Authority. It is designed to prepare students for employment in the juvenile justice system. Coursework includes cooperative work experience, hands-on experience in a correctional agency, to supplement and apply knowledge gained in academic courses.

CAREERS

Opportunities include positions in adult and juvenile probation/parole, work release, jail and detention, a prison system, electronic monitoring, and counseling offenders. Corrections professionals are usually qualified to move into other areas of law enforcement or social service.

For information contact Dick Ashbaugh, ext. 2237.

CORRECTIONS/JUVENILE CERTIFICATE

FALL TERM		CREDITS
CJA-232	Corrections Casework	3
CS-120	Survey of Computing [C]	4
PSY-200	Psychology as a Natural Science	3
PSY-205	Psychology as a Social Science	3
WR-121	English Composition	3

WINTER TERM

CJA-201	Juvenile Delinquency	3
HE-205	Youth Addiction	3
PSY-219	Introduction to Abnormal Psychology	3
SOC-205	Social Stratification & Social Systems	3
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	3

ADDITIONAL REQUIREMENT:

CJA-280	Criminal Justice/Corrections/CWE (can be taken Winter or Spring term)	3
<i>Minimum credits required for certificate</i>		49-50

Criminal Justice

ASSOCIATE OF APPLIED SCIENCE DEGREE

The program prepares students for entry into career positions in law enforcement and related fields. Police officers participate in community policing, investigate criminal activity, patrol neighborhoods, perform benevolent services, collect and examine evidence.

This two-year program covers many of the skills necessary for entry-level employment with a local police agency as well as other opportunities with federal and state agencies. Coursework includes cooperative work experience which affords the student the opportunity for hands-on experience with many local criminal justice agencies. Students may enter this program during any term. (See Criminal Justice, pages 30-31, for a sample transfer curriculum).

CAREERS

Employment opportunities include a variety of assignments in federal, state and local law enforcement agencies. Many departments require college coursework or degrees in addition to civil service requirements.

For information contact Dick Ashbaugh, ext. 2237.

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
HPE-295	Health & Fitness for Life	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	3
WR-122	English Composition	3
SPRING TERM		
CJA-101	Criminology	3
CJA-201	Juvenile Delinquency	3
HE-205	Youth Addiction	3
MTH-050	Technical Mathematics I or MTH-065 Algebra II	3-4
SP-115	Introduction to Intercultural Communication	3

Continued

CRIMINAL JUSTICE ASSOCIATE DEGREE: 2ND YEAR

FALL TERM		CREDITS
CJA-122	Oregon Law	3
CJA-210	Criminal Investigation I	3
CS-120	Survey of Computing [C]	4
HE-207	Stress Management	1
PHL-102	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	3
— —	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
PS-203	U.S. Government & Local Institutions	3

Minimum credits required for degree (requirements + electives) 95-96

RECOMMENDED ELECTIVES

ANT-101	Physical Anthropology
ANT-102	Archaeology & Prehistory
ANT-103	Cultural Anthropology
BT-120	Personal Keyboarding [C]
SPN-111	Spanish Conversation I
SPN-112	Spanish Conversation II
SPN-113	Spanish Conversation III
SOC-204	Introduction to Sociology
SOC-205	Social Stratification & Social Systems
SOC-225	Social Problems

Drafting Technology

ASSOCIATE OF APPLIED SCIENCE DEGREE PROFESSIONAL UPGRADE

Drafting is required for the design and fabrication of almost any product. Professional drafters convert engineering sketches and designs into formal drawings for

- *Autodesk Authorized Premier Training Center since 1986*
 - AutoCAD
 - Autodesk Land Desktop
 - Modeling & Animation
 - Menu Design & Programming
 - Customized Courses
- *Authorized ESRI Learning Center for ArcView*
- *Solid Works*

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 whose disabilities limit or prevent the use of their hands or arms. 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.

CAREERS

Skilled drafters work in engineering, manufacturing, construction, government, utilities, design, engineering, management, estimating, computer programming and related occupations.

For information contact Terence Shumaker, ext. 2365.

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

See degree program on page 57.

DRAFTING TECHNOLOGY ASSOCIATE DEGREE**FIRST TERM**

CDT-101	Drafting Technology Survey	2
CDT-102	Sketching and Problem Solving	3
CDT-103	Computer Aided Drafting	4
CDT-104	Professional Computer Basics	2
CDT-120	Student Success	2
MTH-50	Technical Math I	3

SECOND TERM

CDT-105	Computer Aided Drafting II	4
CDT-106	Applied Descriptive Geometry	3
MTH-80	Technical Math II	3
WR-101	Writing	3
— —	Human Relations Elective (SP-100 recommended)	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-85	Technical Math III	3

FORTH TERM

CDT-108a	Introduction to Solid Modeling	3
CDT-109	Project Drafting	5
CDT-110	Kinematics Drafting	3
CDT-111	Geometric Dimensioning & Tolerancing	3
CDT-201	CAD Menu Design	3

FIFTH TERM

CDT-203	Sheet Metal	3
CDT-206	CAD/CAM Integration	2
CDT-208	Schematic Drafting	3
CDT-209	Structural Drafting I	3
THP-100	Technical Physics (Winter term only)	3
— —	Physical Education, Health, or First Aid	1

SIXTH TERM

CDT-207	Introduction to AutoLISP	3
CDT-210	Industrial Pipe Drafting	3
CDT-211	CAD Illustration & Desktop Publishing	3
CWE-280	Drafting Technology/CWE	6

Minimum credits required for degree 96

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 ASSOCIATE DEGREE: ARCHITECTURAL OPTION

FIRST TERM

CDT-101	Drafting Technology Survey	2
CDT-102	Sketching and Problem Solving	3
CDT-103	Computer Aided Drafting	4
CDT-104	Professional Computer Basics	2
CDT-120	Student Success	2
MTH-50	Technical Math I	3

SECOND TERM

CDT-105	Computer Aided Drafting II	4
CDT-106	Applied Descriptive Geometry	3
MTH-80	Technical Math II	3
WR-101	Writing	3
— —	Human Relations Elective (SP-100 recommended)	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-85	Technical Math III	3

FOURTH TERM

CDT-201	CAD Menu Design	3
CDT-212A	Architectural 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 Illustration & Desktop Publishing	3
CDT-213	Architectural Drafting III	4
CDT-215	Structural Drafting II	4
THP-100	Technical Physics (Winter term only)	3

SIXTH TERM

— —	Physical Education, Health or first aid	1-3
CDT-216	Structural Drafting III	4
CDT-217	Introduction to Remodeling	4
CDT-280	Drafting Tech/ CWE	6

Minimum credits required for degree 97-99

RECOMMENDED

CDT-207	Introduction to AutoLISP	3
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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 National Association for the Education of Young Children (NAEYC).

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 Level II.

CAREERS

Career opportunities may be found as childhood care and education practitioners (home or center based), preschool teachers, paraprofessionals in child and family support systems.

For information call Patricia McIlveen, ext. 2240.

EARLY CHILDHOOD ED. & FAMILY STUDIES CERTIFICATE

SUMMER	CREDITS
MTH-050 Technical Mathematics I	3
WR-121 English Composition	3
or WR-101 Communication Skills	
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-115 Introduction to Intercultural Communication	3
HE-261 Community/CPR (Includes Infant CPR)	1
Minimum credits required for certificate	51

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

** ECE-175 Infant/Toddler Caregiving 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 may be available for Early Childhood Education & Family Studies in 2002-2003. This certificate program would meet first year requirements.

eBusiness Administration

CERTIFICATE

This one-year certificate program prepares students to perform the business related eCommerce skills including a basic background of business functions in accounting, general business, management, sales, and marketing. This certificate is designed to accompany an associate degree in a related field and to give the student eCommerce exposure as it relates to business administration skills needed to work cooperatively with and communicate effectively with programmers, designers, artists, and other technicians.

CAREERS

Career opportunities include research assistant, database manager, systems support specialist, web support supervisor, and management trainee.

For information contact Joan Ryan, ext. 2363.

eBUSINESS ADMINISTRATION CERTIFICATE

FALL TERM

BT-104*	Business Math	3
BT-183	Introduction to eCommerce	3
BA-101	Introduction to Business	4
BA-131	Introduction to Business Computing [C]	4
WR-121	English Composition	3

WINTER TERM

BT-184	Basic eBusiness Methods	3
BA-205	Solving Communication Problems w/Tech. [C]	4
BA-211	Financial Accounting I	4
BA-223	Principles of Marketing	4
BA-285	Human Relations in Business	4

SPRING TERM

BA-226	Introduction to Business Law I	4
BA-238	Sales	3
BA-250	Introduction to Small Business	3
BA-266	Advanced eMarketing	3
BA-280	Business/CWE	3

Minimum credits required for certificate 52

* For this degree, this course meets the General Education Computation requirement.

eBusiness Administration

ASSOCIATE OF APPLIED SCIENCE DEGREE

The eCommerce program emphasizes a managerial and decision-making approach to business administration, both traditional and on the web. All successful businesses have a vital and engaging web presence. This curriculum prepares the student to work cooperatively with web designers, graphic artists, systems support, and technical engineers, in order to enhance functional and productive systems. Students will explore cross-departmental course work to learn skills in web design,

team management, HTML, graphics, computer applications, business analysis, advertising and marketing, design, and workplace employability skills such as planning, time management, critical thinking, problem solving, and compliance with high ethical and privacy standards.

This program is designed to transfer seamlessly to Oregon Technical Institute where the student will have four possible four-year degree options (Management Information Systems, Information Technology (IT), Computer Software Engineering, and Industrial Management). Most of the course work will also transfer to many four-year institutions as required course work and electives.

CAREERS

Career opportunities include project manager, business manager, web designer, web support personnel, database analyst, website administrator, systems analyst, and a host of related occupations that pay competitive salaries and benefits.

For information contact Joan Ryan, ext. 2363.

eBUSINESS ASSOCIATE DEGREE: 1ST YEAR

FALL TERM CREDITS

ART-115	Basic Design	3
BT-183	Introduction to eCommerce	3
BA-101	Introduction to Business	4
BA-131	Intro to Business Computing [C]	4
WR-121	English Composition	3

WINTER TERM

ART-116	Basic Design	3
BA-156	Applied Economics	3
BT-184	Basic eBusiness Methods	3
HPE-295	Health & Fitness for Life	3
BA-223	Principles of Marketing	4

SPRING TERM

CS-125H	Website Design & HTML	3
BA-226	Introduction to Business Law I	4
BA-285	Human Relations in Business	4
BA-280	Business/CWE	3
— —	Political Science or Sociology Elective	3

eBUSINESS ASSOCIATE DEGREE: 2ND YEAR

FALL TERM

BA-205	Solving Communication Problems w/Tech. [C]	4
BA-211	Financial Accounting I	4
BA-267	Project Team Tools	3
MTH-111	College Algebra	4
	or MTH-105 Introduction to Contemporary Mathematics	4

WINTER TERM

BA-239	Advertising	4
BA-265	eManagement	3
CS-1351	Advanced Internet Applications	3
WR-165	Writing on the Web	3
— —	Political Science or Sociology Elective	3

SPRING TERM

BA-238	Sales	3
BA-250	Introduction to Small Business	3
BA-266	Advanced eMarketing	3
BA-280	Business/CWE	3
CS-135DB	Advanced Database	3

Minimum credits required for degree 96

THIRD TERM

MFG-127	Semiconductor Circuits I	4
MFG-134	Principles & Apps Mfg Equip I	4
MFG-145	Microcontamination & Particle Control	3
MTH-111	College Algebra	4
SP-100*	Basic Speech Communication	3

Minimum credits required for certificate 52

Electronics Systems Technology

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

Pending official approval.

This program provides students with the knowledge and skills to enter technician-level career paths in a wide variety of industries, such as circuit board manu-

facturing, medical electronics manufacturing, and electronic equipment manufacturing and service. The degree focuses on electronics, engineering design principles and electronics systems and is taught in a team environment whenever possible.

The coursework focuses on traditional electronics foundation material including a basic electronics series, digital logic series, a troubleshooting series, a physics series, and a semiconductor linear circuit series.

Specific skill areas for the EST degree include test equipment use, computer use, problems solving, team work, understanding math and electronics fundamentals and writing and oral communications.

CAREERS

Career opportunities may be found with large and small employers in high tech industries as trained technicians, operators, and processors.

For information contact Sanda Nedelcu at 503-657-6958 ext. 2335, or Scott Giltz, ext. 2921

ELECTRONICS SYSTEMS TECHNOLOGY CERTIFICATE: 1ST YEAR

FIRST TERM		CREDITS
MFG-107	Industrial Safety & OSHA	3
MFG-135	Semiconductor Processing Overview	2
MFG-137	Basic Electronics I	3
MFG-157	Digital Logic I	3
MTH-065	Algebra II	4
WR-101*	Communication Skills: Occupational Writing	3

SECOND TERM

MFG-139	Principles of Troubleshooting I	2
MFG-142	Basic Electronics II	3
MFG-192	Digital Logic II	4
MFG-209	Advanced Computer Skills for Manufacturing	
or MFG-109	Computer Literacy for Technicians [C]	3
MTH-095	Algebra III	4

ELECTRONICS SYSTEMS TECHNOLOGY ASSOCIATE DEGREE: 1ST YEAR

Complete certificate program.

ELECTRONICS SYSTEMS TECHNOLOGY ASSOCIATE DEGREE: 2ND YEAR

FOURTH TERM		CREDITS
MFG-250	Linear Circuits	3
MFG-227	Semiconductor Circuits II	3
PH-201	General Physics I	5
MFG-124	Statistical Process Control	3
FIFTH TERM		
MFG-239	Principles of Troubleshooting II	3
MFG-252	Control Systems	3
PH-202	General Physics II	5
— —*	PE/Health Elective	3

SIXTH TERM

MFG-220	Principles & Applications of Mfg. Equip. Tech. II	3
MFG-254	Micro Computer Projects	4
MFG-280	Manufacturing/CWE	4
PH-203	General Physics III	5

Minimum credits required for degree (requirements & electives) 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.

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 Scott Giltz at 503-657-6958 ext. 2921 for a current listing of transferable classes.

Continued

Emergency Management

ASSOCIATE OF APPLIED SCIENCE DEGREE

Emergency Management course work prepares a student to make decisions, problem solve, communicate effectively, and coordinate all sources necessary for preparedness, mitigation, response and recovery for any possible disaster. This program will assist the student in preparing for an entry-level position with public or private sector agencies responsible for preparedness planning and managing of any type of life-threatening disasters.

For information contact Dick Ashbaugh, ext. 2237.

Emergency Medical Technology

CERTIFICATE

EMT's (Emergency Medical Technicians) give immediate care to critically ill or injured people in the pre-hospital setting and provide transport to hospitals and nursing homes. The ability to work under pressure, make difficult decisions independently, and perform critical life-saving skills precisely are crucial.

EMT's in Oregon must be certified by the state through the Department of Human Services, Health Division, EMS & Trauma Systems Section (DHS EMS). National certification is available through the National Registry of EMT's (NREMT). Each certification requires approved continuing education classes in emergency care for certification renewal. The EMT Basic class at CCC prepares candidates to test for both national and state certification. The EMT Intermediate class prepares candidates to test for the state certification.

The CCC Emergency Medical Technician college 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 a Paramedic. Technicians can pursue advanced training for the paramedic associate and bachelor degree levels upon transfer to an accredited degree granting institution.

CAREERS

EMT's frequently work as volunteer firefighters and BLS (basic life support) transport providers. The certification may qualify you to volunteer as a firefighter or EMT, apply for paid firefighting positions or improve your current job position in the industrial, forestry, or construction fields. The one-year college EMT certificate leads to a career as a paramedic after further education. Demand for skilled emergency medical technicians is strong and growing.

For more information call Merlin Curry, ext. 2274, or go to <http://depts.clackamas.cc.or.us/EMT>

EMERGENCY MEDICAL TECHNICIAN CERTIFICATE

FIRST TERM		CREDITS
BI-231	Human Anatomy/Physiology I	4
EMT-105	Introduction to Emergency Medical Service	3
MA-110	Medical Terminology	3
MTH-065	Algebra II	4
WR-121	English Composition	3
SECOND TERM		
BI-232	Human Anatomy/Physiology II	4
CS-120	Survey of Computing [C]	4
EMT-101	EMT Basic Part I	5
SOC-205	Social Stratification & Social Systems	3
SP-111	Public Speaking	3
THIRD TERM		
BI-233	Human Anatomy/Physiology III	4
CJA-203	Crisis Intervention	3
EMT-102	EMT Basic Part II	5
EMT-103	EMT Basic Clinical	2
EMT-106	Emergency Communications & Patient Transport	3
EMT-107	EMT Rescue	3
<i>Minimum credits required for certificate</i>		56

Employment Skills Training

CERTIFICATE

The Employment Skills Training program is part of a statewide effort to meet the needs of the Workforce Investment Act. The program offers the opportunity for students to receive hands-on training in a specific occupational area based on individual student goals and academic and occupational skills needs. This program is designed to serve as a beginning point for students in preparation for a job or to get a better job while opening the door to further education to expand employment opportunities over time. The program offers students a combination of work-based training and classroom instruction.

The program is open entry/open exit, allowing students to begin their training any term. Individualized training plans are developed in consultation with the student, CCC faculty and/or program director, and in some cases, a cooperative work experience employer. Students in this program are required to participate in a supervised and structured work-based training in addition to classroom instruction.

This program utilizes local businesses as training sites. Students choose training from many different occupational areas, based on student goals and aptitudes.

To register, students first meet with the Employment Skills coordinator to assess job goals and to design an individualized Employment Skills program.

For information, contact the Occupational Skills Training office at ext. 2085/2723.

EMPLOYMENT SKILLS TRAINING CERTIFICATE OF COMPLETION

PROGRAM REQUIREMENTS

— —	Occupational Related Courses	12-44
EST-081	Employment Skill Training Seminar	0-3
EST-180	Employment Skills Training	2-6

General Education Recommendations (may be taken as part of Occupational Related Courses)

WR-101	Communications: Occupational Writing	3
MTH-050	Technical Mathematics I	3
MFG-109	Computer Literacy for Technicians	3
— —	Human Relations	3

Credits required for certificate 12 – 44

Gerontology

**CERTIFICATE/HUMAN SERVICES EMPHASIS
CERTIFICATE/HOUSING MANAGEMENT EMPHASIS**

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 and students may begin any term. Two areas of concentration are available: the human services emphasis prepares students to work directly with older people, while the housing management emphasis prepares students for administrative positions in residential facilities for the elderly.

CAREERS

Career opportunities may be found in private and governmental social and health service agencies, senior centers, businesses, and retirement/residential facilities.

For information call Patricia McIlveen, ext. 2240.

GERONTOLOGY CERTIFICATE

FALL TERM	CREDITS	
EC-115	Introduction to Basic Economics	
or EC-201	Principles of Economics: Microeconomics	
or BA-156	Applied Economics	3-4
PSY-101	Human Relations	
or BA-285	Human Relations in Business	3-4
SOC-230	Perspectives on Aging	3
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	3
SOC-231	Health & Biological Aspects of Aging	3
— —	Gerontology Electives	6

SPRING TERM

HS-280	Gerontology/CWE	6
SOC-232	Encounters with Death	3
— —	Gerontology Electives	6

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

Minimum credits required (requirements + electives) 46-48

**GERONTOLOGY RECOMMENDED ELECTIVES:
HUMAN SERVICES EMPHASIS**

BI-101-103	General Biology
CS-120	Survey of Computing [C]
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 EMPHASIS**

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 to Business Law I, II
BA-228	Business Presentations
BA-239	Advertising
BA-250	Introduction to Small Business
BA-285	Human Relations in Business
BT-115	General Accounting
BT-210	Intermediate Accounting I & II
CS-120	Survey of Computing [C]
EC-201	Principles of Economics: Micro
EC-202	Principles of Economics: Macro
FN-110	Personal Nutrition
FN-225	Nutrition
HE-249	Mental Health
HPE-295	Health & Fitness for Life
MA-110	Medical Terminology
PS-201-203	U.S. Government
PSY-200	Psychology as a Natural Science
PSY-205	Psychology as a Social Science
PSY-215	Introduction to Developmental Psychology
PSY-219	Introduction to Abnormal Psychology
PSY-221	Introduction to Counseling
PSY-231	Human Sexuality
PSY-240	Interpersonal Awareness & Growth Techniques

Horticulture

CERTIFICATE ASSOCIATE OF APPLIED SCIENCE DEGREE

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 and working with a horticultural employer.

The Horticulture program is the only program 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 the horticulture industry, to extend their knowledge about landscape standards and practices, and to attend the National ALCA Student Career Days each year. Students completing the Horticulture AAS with 2.5 GPA or higher are eligible to take the Oregon Landscape Contractors License Exam.

Horticulture students have the opportunity to 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, 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.

CAREERS

Occupations include nursery and greenhouse work, growing plants, planting shrubs and trees, design, installation and maintenance of landscapes.

Graduates of the Horticulture program may work in greenhouse production, garden centers, supply and equipment sales, interior plant and landscape installation and maintenance. There are additional opportunities as nursery growers, landscape maintenance workers and managers, and greenhouse growers.

For information contact the Horticulture Advisor, Elizabeth Howley, ext. 2389.

OSU TRANSFER AGREEMENT

Some Horticulture classes transfer to Oregon State University as part of a bachelor's degree. See the Horticulture Advisor.

Horticulture students planning to continue their studies at a four-year college should consult the Horticulture Advisor for current transfer credit 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	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	3

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

Minimum credits required for certificate 58

HORTICULTURE ASSOCIATE DEGREE: 1ST YEAR

FALL TERM		CREDITS
CS-090	Computers for New Users	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	3

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
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HORTICULTURE ASSOCIATE DEGREE: 2ND YEAR

FALL TERM

WR-101	Communication Skills: Occupational Writing	3
— —	General Education 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

Minimum credits required for degree (requirements + electives) 94-95

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-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
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

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 degree.

For information contact Connie Hetterly, ext. 2689.

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 Cooperative Work Experience.

GENERAL EDUCATION COURSES

A minimum of 18 credits as specified in this catalog under "General Education Courses" (see page 48). Must include three credits in Health or First Aid and meet computer literacy requirements.

ELECTIVE OCCUPATIONAL COURSES

May be included to complete the minimum credit hours required.

Minimum credits required for degree (requirements + electives) 93

Continued

Instructional Assistant

CERTIFICATE

The Instructional Assistant 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 general education requirements, cooperative work experience and core courses in education scheduled in late afternoon to meet the needs of currently employed teacher assistants and students exploring educational careers.

CAREERS

Career opportunities may be found in a variety of educational settings such as private and public elementary and secondary schools, day care centers and residential care facilities.

For information contact Paula Hamm, ext. 2804.

INSTRUCTIONAL ASSISTANT CERTIFICATE

CORE COURSES

ED-110	Psychology of Learning	3
ED-123	Classroom Techniques in Reading & Language Arts	3
ED-124	Classroom Techniques in Math & Science	3
ED-130	Comprehensive Classroom Management	3
ED-131	Teaching Strategies	3
ED-212	Schools and Society	3
ED-213	Advanced Instructional Techniques in Reading	3
ED-214	Adv. Instructional Techniques in Math & Science	3
ED-258	Multicultural Education	3
ED-268	Educating Mildly and Severely Disabled	3
ED-269	Overview of Students with Special Needs	3
ED-280	Education/CWE (Concurrent with ED-212)	3-6

GENERAL EDUCATION

CS-121	Computer Applications [C]	3
MTH-095	Algebra III	4
SP-111	Public Speaking	3
WR-121	English Composition	3
<i>Minimum credits required for certificate</i>		49-52

Manufacturing Technology

CERTIFICATE ASSOCIATE DEGREE OF APPLIED SCIENCE 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, hydraulics 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.

CAREERS

Employment opportunities include machine tool operator, CNC programmer/operator, computer-aided manufacturing technician, quality control technician, plant maintenance, CAD/CAM, apprentice machinist leading to tool and die maker, maintenance machining, modelmaker or millwright.

For information, contact 503-657-6958 and the extension of the program advisor listed for your interest area.

DEGREE	ADVISOR	EXT.
CAD/CAM Technology	Mike Mattson	2483
Electronics Systems Tech.*	Sanda Nedelcu	2335
Manufacturing Technology	Mark Schmidt	2329
Microelectronics Technology	Sanda Nedelcu	2335

Or contact the department chair, Scott Giltz at ext. 2921.

* Pending official approval.

MANUFACTURING 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 Manufacturing Engineering Technology degree program. Contact Scott Giltz at 503-657-6958, ext. 2921 for a current listing of transferable classes.

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

See degree program on page 57.

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 (or higher level)	3

WINTER TERM

MFG-109	Computer Literacy for Technicians [C]	
	or MFG-209 Advanced Computer Skills for Manufacturing [C]	3
MFG-112	Machine Tool Fundamentals II	9
WR-101	Comm. Skills: Occup. Writing (or higher level)	3
— —	Human Relations Elective (see page 49)	3

SPRING TERM

MFG-113	Machine Tool Fundamentals III	6
MFG-150	Welding Processes	4
MFG-221	Materials Science	3
MFG-280	Manufacturing Technology/CWE	4

Minimum credits required for certificate 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 (or higher level)	3

SECOND TERM

MFG-107	Industrial Safety & OSHA	3
MFG-109	Computer Literacy for Technicians [C]	
	or MFG-209 Advanced Computer Skills for Manufacturing [C]	3
MFG-112	Machine Tool Fundamentals II	9
WR-101*	Comm. Skills: Occup. Writing (or higher level)	3

THIRD TERM

MFG-113	Machine Tool Fundamentals III	9
MFG-150	Welding Processes	4
— —*	Human Relations Elective (see page 49)	3

FOURTH TERM

MFG-106	Applied Geometric Dimensioning & Tolerancing	
	or CDT-111 Geometric Dimensioning & Tolerancing	2
MFG-201	CNC Programming I	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 Programming II	4
MFG-205	Computer-Aided Manufacturing II	4
MFG-280	Manufacturing Technology/CWE	4
— —*	PE/Health Elective (see page 49)	3

SIXTH TERM

MFG-203	CNC Programming III - Electrical Discharge Mach.	3
MFG-206	Computer-Aided Manufacturing III	2
MFG-221	Materials Science	3
— —*	General Education Elective (see page 49)	3

Minimum credits required for degree 95

*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 & Management

ASSOCIATE OF APPLIED SCIENCE DEGREE

The Marketing & Management program at Clackamas leads to an Associate of Applied Science degree. This program includes identifying customer needs, developing goods and services to satisfy those needs, communicating information about products to potential customers, and distributing the product to customers.

CAREERS

Students with this associate degree may work in areas such as retail and wholesale sales, marketing management, market research, advertising and distribution.

For information contact Dale Hatfield, ext. 2361, or Joan Ryan, ext. 2363.

MARKETING & MANAGEMENT ASSOCIATE DEGREE: 1ST YEAR

FALL TERM		CREDITS
BA-101	Introduction to Business	4
BA-285	Human Relations in Business	4
BT-120	Personal Keyboarding [C]	2
SP-111	Public Speaking	3
WR-121	English Composition	3

WINTER TERM

BA-131	Introduction to Business Computing [C]	4
BA-156	Applied Economics	3
BA-223	Principles of Marketing	4
BT-104*	Business Math	3

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**

BA-206	Management Fundamentals	4
BA-212	Financial Accounting II	4
BA-239	Advertising	4
PE/HE/HPE	Physical Education/Health	3

WINTER TERM

BA-213	Decision Making w/Accounting Information	4
BA-222	Financial Management	3
BA-227	Introduction to Business Law II	4
EC-201	Economics	4
— —	Sociology Course	3

SPRING TERM

BA-224	Human Resource Management	3
BA-225	Business Report Writing	3
BA-228	Business Presentations	3
BA-261	Consumer Behavior	4
BA-280	Business/CWE	3

Minimum credits required for degree 94

* For this degree, this course meets the General Education Computation requirement.

Marketing

CERTIFICATE

This certificate is recommended to students who wish to work for or operate a business organization. Coursework includes identifying customer needs, developing goods and services to satisfy those needs, communicating information about products/services to potential customers and distributing the product.

CAREERS

The Marketing certificate prepares students for entry-level marketing positions in areas such as retail and wholesale sales, market research, advertising, and distribution.

For information contact Dale Hatfield, ext. 2361, or Joan Ryan, ext. 2363.

MARKETING CERTIFICATE**FALL TERM CREDITS**

BA-101	Introduction to Business	4
BA-285	Human Relations in Business	4
BT-120	Personal Keyboarding [C]	2
SP-111	Public Speaking	3
WR-121	English Composition	3

WINTER TERM

BA-131	Introduction to Business Computing [C]	4
BA-223	Principles of Marketing	4
BA-156	Applied Economics	3
BT-104*	Business Math	3

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
BA-280	Business/CWE	3

Minimum credits required for certificate 48

* For this degree, this course meets the General Education Computation requirement.

Medical Assistant

CERTIFICATE

The Medical Assistant program is accredited by the Commission on Accreditation of Allied Health Programs (CAAHEP) and is designed to prepare students for entry-level employment in a medical office or clinic.

Trained in both medical and office administration skills, medical assistants assist doctors and nurses in administering to the needs of patients. They may also operate specialized equipment and perform standard laboratory tests. Office administration duties may include patient scheduling, client/insurance billing and data entry. Students participate in unpaid supervised practicums in medical offices or clinics.

Admission to the Medical Assistant program is during the fall term and by special application only. Specific skill levels are required in reading, writing and math. Applicants are advised that there is a certain level of dexterity and physical strength involved in successful completion of this program. Application packets with admission procedures and requirements are available from the Help Center or the Advising & Counseling Center.

CAREERS

The rapidly growing health care industry offers excellent career opportunities for skilled people working in physicians' offices and medical clinics.

For information contact Maureen Mitchell, ext. 2910, or Lisa Fithian, ext. 2272.

MEDICAL ASSISTANT CERTIFICATE**FALL TERM CREDITS**

BI-055	Introduction to Human Biology	3
BT-145	Medical Insurance & Billing	3
CS-120	Survey of Computing [C]	4
MA-110	Medical Terminology	3
MA-112	Medical Office Practice	3

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
WR-101	Communication Skills: Occupational Writing	3
MTH-050	Technical Mathematics I	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	3
PSY-101	Human Relations	3
SP-100	Basic Speech Communication	3

Minimum credits required for certificate 51

Current First Aid and CPR 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.

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.

- Semiconductor Workforce Consortium
- Intel Workstudy Program
- MATEC Curriculum
- NOCTI Certification

CAREERS

Career opportunities may be found with large and small employers in high tech industries as trained technicians, operators, and processors.

For information contact Sanda Nedelcu at 503-657-6958 ext. 2335, or Scott Giltz, ext. 2921

MICROELECTRONICS SYSTEMS TECHNOLOGY CERTIFICATE

FIRST TERM		CREDITS
MFG-104	Print Reading	2
MFG-107	Industrial Safety & OSHA	3
MFG-135	Semiconductor Processing Overview	2
MFG-137	Basic Electronics I	3
MTH-050*	Technical Mathematics I	3
WR-101*	Comm. Skills-Occup. Writing	3

SECOND TERM

ESH-100	Environmental Regulations	2
MFG-109	Computer Literacy for Technicians ©	3
MFG-138	Silicon Materials Fabrication	2
MFG-139	Principles of Troubleshooting I	2
MFG-142	Basic Electronics II	3
MTH-080*	Technical Mathematics II	3

THIRD TERM

MFG 157	Digital Logic I	3
MFG-136	Photolithography Overview	2
MFG-145	Microcontamination & Particle Control	3
MTH-085*	Technical Mathematics III	3
MFG 124	Statistical Process Control	3
SP-100*	Basic Speech Communication	3

Minimum credits required for certificate 48

MICROELECTRONICS SYSTEMS TECHNOLOGY ASSOCIATE DEGREE: 1ST YEAR

Complete certificate program.

MICROELECTRONICS SYSTEMS TECHNOLOGY ASSOCIATE DEGREE: 2ND YEAR

FOURTH TERM		CREDITS
CDT-103	Computer-Aided Drafting I	3
MFG-105	Dimensional Inspection	2
MFG-154	Semiconductor Physics	2
MFG-155	Semiconductor Chemistry	2
MFG-156	Oxidation & Deposition Overview	2
— —*	General Education Elective	3

FIFTH TERM

— —*	PE/Health Elective (see page 45)	3
MFG-129	Basic Vacuum Technology	2
MFG-140	Principles of Fluid Power	3
MFG-239	Principles of Troubleshooting II	3
MFG-134	Principles & Applications of Mfg Equip Tech I	4

SIXTH TERM

MFG-195	Wet/Dry Etch & Ion Implantation	4
MFG-146	Semiconductor Materials	4
MFG-127	Semiconductor Circuits I	4
MFG-220	Prin & Applications of Mfg Equip Tech II	3
MFG-280	Manufacturing/CWE	4

Minimum credits required for degree (requirements & electives) 96

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 Scott Giltz at 503-657-6958, ext. 2921 for a current listing of transferable classes.

*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.

Continued

Network & Microcomputer Specialist

CERTIFICATE ASSOCIATE OF APPLIED SCIENCE DEGREE

The Network & Microcomputer Specialist program prepares students 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. 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 Survey of Computing (CS-120), Writing 95, and Math 65. This program is an open program, meaning that students may take any class in the program for which they have completed the prerequisite.

CAREERS

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

For information contact Linda Anderson, ext. 2539.

NETWORK & MICROCOMPUTER SPECIALIST CERTIFICATE

FALL TERM		CREDITS
CS-121	Computer Applications [C]	3
CS-160	Computer Tech Orientation	2
CS-225	Computer End-User Support	3
CS-140W	Operating Systems I: Windows	4
MTH-092	Math for Computer Technicians	4
WINTER TERM		
CS-140D	Operating Systems I: DOS	3
CS-227	PC Repair I	4
CS-240W	Operating Systems II: Windows	3
CS-278	Data Communications	3
WR-101	Communications Skills: Occupational Writing	3
SPRING TERM		
CS-228	PC Repair II	4
CS-279W	LAN I: Windows Server Administration	4
CS-280	Computer Science/CWE	3
CS-125H	Web Site Design and HTML	3
PSY-101	Human Relations	3 or 4
or BA-285	Human Relations in Business	
<i>Minimum credits required for certificate:</i>		49-50

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

Complete certificate program.

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

FALL TERM		CREDITS
CS-135DB	Advanced Database	3
CS-288W	LAN II: Windows WAN	4
CS-140U	Operating Systems I: Linux/Unix	3
CS-229	Network Hardware Repair	4
— —	Recommended Elective	3-4
WINTER TERM		
CS-240U	Operating Systems II: Linux/Unix System Administration	3
CS-244	Systems Analysis	3
HE-252	First Aid/CPR	
or HPE-295	Health & Fitness for Life	3
CS-279N	LAN I: Novell Administration	4
— —	Recommended Elective	3-4
SPRING TERM		
CS-280	Computer Science/CWE	6
CS-288N*	LAN II: Novell WAN	
or CS-288U	LAN II: Linux/unix Internetworking	3-4
— —	Recommended Elective	3-4

Minimum credits required for degree (requirements & electives) 95-99

RECOMMENDED ELECTIVES:	CREDITS
Complete 10-12 credits from the following:	
BA-101 Introduction to Business	4
BT-183 Introduction to eCommerce	3
— — Any computer science course numbered 133 or above except: CS-178, CS-178E, and CS-295E.	

*Either CS-288U or CS-288N must be taken. If both are taken, one class fulfills the requirement and the other counts as a Recommended Elective.

Nursing

PRACTICAL NURSE CERTIFICATE ASSOCIATE OF APPLIED SCIENCE DEGREE

The Nursing program is a limited entry, six term program leading to an Associate of Applied Science in Nursing. Upon completion of the program, graduates

Accredited by:

- Oregon State Board of Nursing
- National League of Nursing

are eligible to take the national examination (NCLEX-RN) for registered nurse licensure. After completion of four terms, students may opt

to take the national examination (NCLEX-PN) for practical nurse licensure.

Admission into the nursing program is by special application. Prerequisites include computer literacy and microbiology. Additional prerequisites of math, chemistry and writing are required for nursing support courses.

Admitted CCC students who are interested in earning a bachelor's degree may apply for provisional admission to OHSU. Packets detailing admission are available

from the Nursing Department, the Help Center, or the Advising & Counseling Center.

Students must achieve “C” or higher grades in all required courses (including prerequisites) prior to advancing to the next term. Level I requirements must be completed prior to advancing to Level II. LPNs returning for RN education should contact the nursing advisor.

CAREERS

Graduates find employment at area hospitals, nursing homes and community agencies.

For information contact Lisa Fithian, ext. 2272.

PRACTICAL NURSING CERTIFICATE

Level I Nursing, NUR-201 and NUR-212 (plus prerequisites)

REGISTERED NURSE ASSOCIATE DEGREE

Level I Nursing & Level II Nursing (plus prerequisites)

PREREQUISITES:

BI-234	Microbiology	4
BI-231*	Human Anatomy/Physiology I	4
BI-232*	Human Anatomy/Physiology II	4
BI-233*	Human Anatomy/Physiology III	4
— —	Must meet computer literacy requirement	

Beginning with the 2002-2003 application, BI-231/232/233 Human Anatomy/Physiology I, II, & III will be prerequisites.

Additional prerequisites may be required for support and prerequisite courses. See Course Descriptions for those requirements.

PRACTICAL NURSING CERTIFICATE

LEVEL I—FALL TERM		CREDITS
NUR-101	Nursing I	4
NUR-101C	Lab/Clinical Application	4
NUR-112	Communications: Methods & Applications	2
PHC-211	Pharmacology I	2
— —	CPR certification	

WINTER TERM

NUR-102	Nursing II	4
NUR-102C	Lab/Clinical Application	4
PHC-212	Pharmacology II	2

SPRING TERM

NUR-103	Nursing III	4
NUR-103C	Lab/Clinical Application	4

ADDITIONAL REQUIRED COURSES:

FN-225*	Nutrition	4
PSY-215*	Introduction to Developmental Psychology	3
WR-121*	English Composition	3

All Level I courses to be completed with a “C” grade or better prior to continuing to Level II of the Nursing Program.

LEVEL II—FALL TERM

NUR-201	Nursing IV	4
NUR-201C	Lab/Clinical Application	6
NUR-212	Professional-Interpersonal Communication	2

Minimum credits required for certificate 68

EXIT OPTION FOR PN

Must complete all four preceding terms.

NURSING ASSOCIATE DEGREE

WINTER TERM

NUR-202	Nursing V	4
NUR-202C	Lab/Clinical Application	6
NUR-215	Trends & Issues	1

SPRING TERM

NUR-203	Nursing VI	4
NUR-203C	Lab/Clinical Application	6

ADDITIONAL REQUIRED COURSES:

— — *	Social Science or Humanities Electives	6
PE-185	Physical Education or CPR certification	1 0

Minimum credits required for degree (requirements + electives) 96

*Courses may be taken prior to admission to the nursing program.

Note: All clinical/practicum courses are “Pass/No Pass”.

Occupational Skills Training

CERTIFICATE

The Occupational Skills 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 competitively 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.

For information contact the Occupational Skills office at ext. 2085 or ext. 2723.

OCCUPATIONAL SKILLS TRAINING CERTIFICATE

PROGRAM REQUIREMENTS

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

GENERAL EDUCATION REQUIREMENTS

WR-101	Communications: Occupational Writing	3
MTH-050	Technical Math I	3
— —	Computer Literacy	2-3
— —	Human Relations	3

Minimum credits required for certificate 50-51

Office Assistant

CERTIFICATE

The Office Assistant certificate provides students with a strong foundation of basic skills in business administration. Emphasis is placed on critical thinking and human relation skills.

Coursework includes general education requirements, industry standard computer programs, and specific business administration courses.

CAREERS

Career opportunities are in a variety of office positions such as administrative assistant, legal assistant, legal secretary, medical secretary, receptionist, office manager, office assistant, word processor or transcriptionist.

For information contact Tanya Patrick, ext. 2426.

OFFICE ASSISTANT CERTIFICATE

FALL TERM		CREDITS
BA-101	Introduction to Business	4
BT-104*	Business Math	3
BT-122	Keyboarding Skill Building	2
BT-124	Business English I	3
BT-160	Microsoft Word [C]	3
WINTER TERM		
BA-251	Office Management	3
BA-285	Human Relations in Business	4
BT-125	Business English II	3
BT-161	Intermediate Microsoft Word [C]	3
BT-176	Excel [C]	3
SPRING TERM		
BA-280	Business/CWE	3
BT-115	Intro. to General Accounting & Bookkeeping	3
BT-170	Access [C]	3
BT-240	Filing/Records Management	3
BT-262	Advanced Word [C]	3
WR-121	English Composition	3
<i>Minimum credits required for certificate</i>		49

* For this degree, this course meets the General Education Computation requirement.

Real Estate

CERTIFICATE PROFESSIONAL UPGRADE

The Real Estate certificate program is designed for those who are interested in a career in real estate, or for employees already in the profession who seek to upgrade their professional skills.

For information contact Dale Hatfield, ext. 2361.

REAL ESTATE CERTIFICATE

COURSE		CREDITS
RE-110	Real Estate Practices	3
RE-112	Real Estate Law I	3
RE-116	Real Estate Finance	3
RE-118	Real Estate Appraisal I	3
— —	Electives	6

Minimum credits required for certificate (requirements + electives) 18

RECOMMENDED ELECTIVES:

Any Business Administration (BA), Business Technology (BT), or Real Estate (RE) course not included in your degree program.

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.

For information contact Dale Hatfield, 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	3
BA-285	Human Relations in Business	4
WR-121	English Composition	3

Minimum credits required for certificate 21

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 aquatic chemistry and microbiology and preparation for provisional operator certification exams (Oregon Health Division and DEQ).

Three courses in Ultrapure Water Production are now available. These courses were developed in cooperation with Intel Corporation.

Program prerequisites must be completed prior to fall term entry. Application cards are available from the Help Center or the Advising & Counseling Center.

CAREERS:

The one-year certificate program is designed for entry level job placement in the water treatment and water reclamation industries. The two-year associate of science degree provides coursework and internship experience designed to provide an overview of a wide range of environmental career opportunities.

Water & Environmental Technology program graduates often pursue jobs with city, county, or state agencies in positions such as wastewater treatment plant operator, drinking water treatment plant operator, environmental laboratory technician, ultra-pure water technician, industrial pre-treatment coordinator, engineering consultants and technician, surface water management, or state and federal regulator.

For information contact Dan Lundy, ext. 2478.

WATER & ENVIRONMENTAL TECHNOLOGY CERTIFICATE

FALL TERM		CREDITS
CH-104	Introductory Chemistry	
or CH-221	General Chemistry	5
PSY-101	Human Relations	3
WQT-110	Wastewater Operations I	4
WQT-111	Waterworks Operations I	4
WR-101	Communication Skills: Occupational Writing	
or WR-121	English Composition	3

WINTER TERM

BI-204	Elementary Microbiology	4
WQT-120	Wastewater Operations II	4
WQT-121	Waterworks Operations II	4
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 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

Minimum credits required for certificate 57

**WATER & ENVIRONMENTAL TECHNOLOGY ASSOCIATE DEGREE:
1ST YEAR**

Complete certificate program.

**WATER & ENVIRONMENTAL TECHNOLOGY ASSOCIATE DEGREE:
2ND YEAR**

FALL TERM		CREDITS
WQT-240	Special Topics Seminar	4
WQT-241	Aquatic Microbiology	4
WQT-242	Hydraulics of Water & Wastewater	3
WQT-280	Water & Environmental Projects II	5

WINTER TERM

GEO-130	Introduction to Environmental Geography	3
MTH-095	Intermediate Algebra	
or MTH-111	College Algebra	4
SP-100	Basic Speech Communication	3
— —	Elective	3-4

SPRING TERM

CS-121	Computer Applications [C]	3
HE-252	First Aid/CPR	3
— —	Elective	3-4

Minimum credits required for degree (requirements + electives) 95-97

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
WQT-125	Ultrapure Water Production I
WQT-135	Ultrapure Water Production II
WQT-245	Instrumentation & Control

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

PROFESSIONAL UPGRADE COURSES:

WQT-009	Cross Connect. Backflow Assembly Tester (4.0 CEU)
WQT-009	Cross Connection Inspectors 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-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-009	Certification Review/Wastewater Operators (CEU)
WQT-009	Certification Review/Waterworks Operators (CEU)

Course Descriptions

Course Descriptions

Glossary of terms	79	GS	General Science	117
AB* Collision Repair	79	HD	Human Development & Career Planning	118
ABR* Collision Repair/Refinishing	80	HDF	Family Studies	119
AM* Automotive Service Technology	80	HE/HPE	Health	119
ANT Anthropology	81	HOR**	Horticulture	120
APP* Apprenticeship	82	HS	Human Services/ Gerontology	123
ART/APA Art	82	HST	History	123
ASC Arts and Sciences	85	HUM	Humanities	124
ASE+ Adult High School Diploma	85	J	Journalism	126
ASL* American Sign Language	87	JPN	Japanese	126
BA Business	88	MA*	Medical Assistant	127
BC* Building Construction Technology	90	MFG**	Manufacturing Technology	127
BI Biology	92	MIT	Medical Imaging Technology	132
BOT Botany	93	MTH	Mathematics	132
BT* Business Technology	93	MUP	Music Performance	134
CAD** Computer-Aided Drafting	95	MUS	Music	138
CDT** Drafting	96	NUR	Nursing	142
CH Chemistry	99	OS*	Study Skills	143
CIV Citizenship	100	OST*	Occupational Skills Training	143
CJA Criminal Justice	100	PE	Physical Education	143
CPL Credit for Prior Learning	101	PH	Physics	143
CS Computer Science	101	PHC	Pharmacology	144
CW+ Computer Science Workshops/Short Courses	105	PHL	Philosophy	144
CWE Cooperative Work Experience	105	PIE	Program for Intensive English	145
EC Economics	106	PS	Political Science	146
ECE* Early Childhood Education	106	PSY	Psychology	147
ED Education	107	R	Religious Studies	148
EE Electrical Engineering	108	RD*	Reading	149
EL* Reading/Study Skills	108	RE*	Real Estate	149
EMT* Emergency Medical Technician	108	RUS	Russian	149
ENG English	109	SBM+	Small Business Management	150
ENL English Non-Native Language	110	SKH+	TACT (Training in Adaptive Computer Tech.)	150
ESL* English as a Second Language	111	SKO+	Reading	150
ESH Environmental Safety & Health	113	SOC	Sociology	150
ESR Environmental Science	114	SP	Speech	151
EST Employee Skills Training	114	SPN	Spanish	153
FN Food & Nutrition	114	SSC	Social Science Inquiry	154
FR French	114	TA	Theatre Arts	156
G Geology	115	TPH*	Technical Physics	157
GE General Engineering	116	WQT*	Water & Environmental Technology	157
GED+ General Ed. Development/Adult Basic Ed.	116	WR	Writing	159
GEO Geography	117	WS	Women's Studies	160
GER German	117	Z	Zoology	160

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

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

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

Glossary of terms

Computer Literacy

A course marked with “[C]” meets the CCC computer literacy requirement.

Corequisite

A second, related course in which a student must be simultaneously enrolled, in addition to the primary course.

Course

A subject or an instructional subdivision of a subject, usually offered during a single term.

Credit

A unit of measure granted by the State for instructional hours taken.

Elective

A course which may be selected from a list of alternatives in order to fulfill requirements.

Instructor consent

Written permission from the course instructor, granted prior to enrollment.

Open entry/open exit

Some courses may be entered at any time before the last day of the eighth week of a term, and exited any time after completing course requirements.

Placement test

A CCC-administered test that assesses current skills to determine appropriate class placement.

Prerequisite

A skill-building course or activity that must be successfully completed prior to enrolling in advanced courses.

Recommended

A suggested competence that will enhance a student's classroom success.

Sequence

A related series of classes covering a specific subject, usually in a predetermined order.

Term

Approximately one quarter of the academic year. Fall, winter, and spring terms range in length from 11 to 12 weeks. Summer term runs for either eight or eleven weeks (depending on the course).

Transfer sequence

A standardized sequence of lower division college courses designed to facilitate transfer from Clackamas to a state college or university.

Variable credit

Some courses are offered as individualized learning for which a range of credits may be earned.

AB

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

Collision Repair

AB-101 Auto Restoration

3 credits

Fall/Winter/Spring/Summer

1 class, 11 lab hours/week

This course is designed for students who are interested in doing auto body repair and paint on their own vehicles. All phases of repair including dent removal, panel replacement, welding and painting are covered in the classroom or by individual instruction in the shop.

AB-111 Collision Repair/Chassis & Brakes

5 credits, Winter

2 class, 6 lab hours/week

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

AB-112 Collision Repair Welding I

2 credits, Fall/Winter/Spring

1 class, 4 lab hours/week

Focuses on auto collision damage repair. Emphasis is on MIG welding on light gauge metals, oxygen-acetylene cutting and forming.

AB-113 Collision Repair I/Nonstructural

1-12 credits, Winter

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, Spring

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, Winter

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-180 Collision Repair/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 body repair shop. Required: Instructor consent.

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

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, Spring
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, Fall/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.

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
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
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, 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

Instruction in custom color application and special effects. Theory and practical application of personal protection, shop safety and fire prevention, environmental concerns and hazardous waste disposal methods, product choice and compatibility, selection and use of masking materials, and color harmony.

ABR-180 Auto Body Refinishing/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 refinishing shop. Required: Instructor consent & a CWE seminar.

AM

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

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 minor services such as: oil change, lubrication, fluid checks, brakes, cooling system, electrical system, safety, and other quick service.

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
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
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
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 latches, manual transmissions, U-joints, drive lines, final drives, overdrive, and four wheel drives.

AM-243 Fuel 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-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. ANT-101/102/103 meets the Social Science Sequence requirement for the AAOT. 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. ANT-101/102/103 meets the Social Science Sequence requirement for the AAOT. Also offered as a three credit telecourse: Out of the Past. 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. ANT-101/102/103 meets the Social Science Sequence requirement for the AAOT. Also offered as a three credit telecourse: Faces of Culture. Recommended: Placement in RD-115.

ANT-230 Indians of Oregon
3 credits, not offered every year
3 class hours/week

Survey of Native American cultures of Oregon based on archaeological, ethnohistorical, and ethnographic evidence. Begins with arrival of humans in this region more than 12,000 years ago and concludes with contemporary Native American issues. ANT-230/231/232 meets the Social Science Sequence requirement for the AAOT. Recommended: Placement in RD-115.

ANT-231 Indians of the Pacific N.W.
3 credits, not offered every year
3 class hours/week

Survey of Native American cultures in the Pacific Northwest region from prehistoric times to the present. Course is based on archaeological, ethnohistorical, and ethnographic evidence. Includes contemporary issues in Northwest Native American life. ANT-230/231/232 meets the Social Science Sequence requirement for the AAOT. Recommended: Placement in RD-115.

ANT-232 Indians of North America
3 credits, not offered every year
3 class hours/week

A broad survey of the cultures, arts, and history of Native Americans north of Mexico. Uses archaeological, ethnohistorical, and ethnographic evidence to explore the diversity of Native American cultures from prehistoric times to the present. Includes contemporary issues in Native American life. ANT-230/231/232 meets the Social Science Sequence requirement for the AAOT. Recommended: Placement in RD-115.

ANT-242 Introduction to Field Archaeology
3-9 credits, not offered every year
5 class, 8 lab hours/week, 4 week class

An introduction to the goals and methods of archaeology. Students participate in ongoing research involving archaeological site survey, excavation and analysis. Lectures, field work, library and laboratory research teach the techniques of modern archaeology field research. 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-115 Basic Design: Two Dimensional Design
3 credits, Fall/Spring
6 class hours/week

Acquaints students with the vocabulary of composition, builds creative and analytical skills, and examines historical and contemporary issues related to visual composition.

ART-116 Basic Design: Color Theory & Composition
3 credits, Fall/Winter
6 class hours/week

Explores the physiology and the psychology of color relating to visual composition, and examines historical and contemporary issues of color and composition in the arts.

ART-117 Basic Design: Three Dimensional Composition
3 credits, Winter/Spring
6 class hours/week

Examines the elements of form and space, the principles of structure, and the processes and psychology involving form. Historical and contemporary issues relating to sculpture, architecture and design are considered.

ART-131 Drawing
3 credits, Fall
6 class hours/week

Introduces students to basic drawing tools, materials and composition elements of line, gesture and value. Assigned problems deal with the direct observation of physical reality as it relates to the creation of volume and form on a two-dimensional plane. Additional assignments include readings from the required text and critical analysis of completed projects.

ART-132 Drawing
3 credits, Winter
6 class hours/week

Introduces students to additional materials and advanced elements of composition, form and movement. Assigned problems deal with the geometric division of space, manipulation of the visual surface, positive/negative space interaction, atmospheric perspective and linear perspective. Additional assignments include readings from the required text and critical analysis of completed projects and assigned exhibitions.

ART 133 Drawing
3 credits, Spring
6 class hours/week

Introduces students to additional materials and the psychology and method of personal expression as it relates to the visual language of art. Assigned problems deal with the integration and manipulation of composition, form, symbolism, value, color and personal conceptual nature. Additional assignments include readings from the required text and critical analysis of completed projects and assigned exhibitions.

ART 161 Photography/Beginning
3 credits, Fall
6 class 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.

ART 162 Photography/Beginning
3 credits, Winter
6 class 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.

ART 163 Photography/Beginning
3 credits, Spring
6 class 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.

ART-204 History of Western Art
3 credits, Fall
3 class hours/week

The prehistory of art, the Ancient World, and early Christianity. Survey of visual art styles, comprehensive evaluation of art forms, and development of practical art language. Students must be able to write brief research papers. ART-204/205/206 meets the Arts & Letters Sequence 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

The Middle Ages and the early Renaissance. Survey of visual art styles, comprehensive evaluation of art forms, and development of practical art language. Students must be able to write brief research papers. ART-204/205/206 meets the Arts & Letters Sequence 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

The Baroque and the Modern World through the early 20th century. Survey of visual art styles, comprehensive evaluation of art forms, and development of practical art language. Students must be able to write brief research papers. ART-204/205/206 meets Arts & Letters Sequence 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.

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.

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.

ART-218 Calligraphy
2 credits
Fall/Winter/Spring/Summer
4 class hours/week

An introduction to the use of calligraphic tools, techniques and materials and the historical aspects of calligraphy.

ART-225 Computer Graphics I [C]
1-3 credits, Fall/Winter/Spring
4-6 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 computer literacy requirement. Recommended: Pass ART-115.

ART-226 Computer Graphics II [C]
1-3 credits, Winter
4-6 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. Recommended: Pass ART-225.

ART-227 Computer Graphics III [C]
1-3 credits, Spring
4-6 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 computer literacy requirement. Recommended: Pass ART-225 & pass ART-226.

ART-250 Ceramics/Beginning
1-3 credits, Fall
4-6 class hours/week

Demonstrates construction techniques and methods used to design, shape, and form clay. Includes hand building, wheel throwing, decoration, glazing, and firing.

ART-251 Ceramics/Beginning
1-3 credits, Winter
4-6 class hours/week

Demonstrates construction techniques and methods used to design, shape, and form clay. Includes hand building, wheel throwing, decoration, glazing, and firing.

ART-252 Ceramics/Beginning
1-3 credits, Spring
4-6 class hours/week

Demonstrates construction techniques and methods used to design, shape, and form clay. Includes hand building, wheel throwing, decoration, glazing, and firing.

ART-253 Ceramics/Intermediate
1-3 credits, Fall
4-6 class hours/week

Demonstrated construction techniques and methods used to design, shape, and form clay. Includes hand building, wheel throwing, decoration, glazing, and firing. Prerequisites: Pass ART-250, pass ART-251 & pass ART-252 or instructor consent.

ART-254 Ceramics/Intermediate
1-3 credits, Winter
4-6 class hours/week

Demonstrates construction techniques and methods used to design, shape, and form clay. Includes hand building, wheel throwing, decoration, glazing, and firing. Prerequisites: Pass ART-250, pass ART-251 & pass ART-252 or instructor consent.

ART-255 Ceramics/Intermediate

1-3 credits, Spring
4-6 class hours/week

Demonstrates construction techniques and methods used to design, shape, and form clay. Includes hand building, wheel throwing, decoration, glazing, and firing. Prerequisites: Pass ART-250, pass ART-251 & pass ART-252 or instructor consent.

ART-257 Metalsmithing/Jewelry

1-3 credits, Fall
4-6 class hours/week

Basic techniques of silver and non-precious metals, fabrication, forming and surface treatments. Includes sawing, filing, etching, roller printing and chain-making. Students design and execute finished pieces of jewelry and small sculpture. No experience necessary.

ART-258 Metalsmithing/Jewelry

1-3 credits, Winter
4-6 class hours/week

Basic techniques of casting in silver and bronze. Includes cuttlefish, centrifugal, sand casting, clay impression, tumbling, and patination. Students design and execute finished pieces of jewelry, small sculpture, and flatware. No experience necessary.

ART-259 Metalsmithing/Jewelry

1-3 credits, Spring
4-6 class hours/week

Basic techniques of stone setting. Includes round, triangular and square bezels for cabochons, tube setting and commercial and irregular prong setting for faceted stones. Students design and execute finished pieces of jewelry that include different types of stone setting. No experience necessary.

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

1-3 credits, Fall
6 class hours/week

Exploration of various painting techniques using still life, life models, landscapes, abstraction, and mixed media. Offers visual observation and composition of selected subjects using oil or acrylic media.

ART-282 Painting/Beginning

1-3 credits, Winter
6 class hours/week

Exploration of various painting techniques using still life, life models, landscapes, abstraction, and mixed media. Offers visual observation and composition of selected subjects using oil or acrylic media.

ART-283 Painting/Beginning

1-3 credits, Spring
6 class hours/week

Exploration of various painting techniques using still life, life models, landscapes, abstraction, and mixed media. Offers visual observation and composition of selected subjects using oil or acrylic media.

ART-284 Painting/Intermediate

1-3 credits, Winter
6 class hours/week

Exploration of various painting techniques using still life, life models, landscapes, abstraction, and mixed media. Offers visual observation and composition of selected subjects using oil or acrylic media. Prerequisites: Pass ART-281, pass ART-282 & pass ART-283 or instructor consent.

ART-285 Painting/Intermediate

1-3 credits, Winter
6 class hours/week

Exploration of various painting techniques using still life, life models, landscapes, abstractions, and mixed media. Offers visual observation and composition of selected subjects using oil or acrylic media. Prerequisites: Pass ART-281, pass ART-282 & pass ART 283 or instructor consent.

ART-286 Painting/Intermediate

1-3 credits, Spring
6 class hours/week

Exploration of various painting techniques using still life, life models, landscapes, abstraction, and mixed media. Offers visual observation and composition of selected subjects using oil or acrylic media. Prerequisites: Pass ART-281, pass ART-282 & pass ART-283 or instructor consent.

ART 289 Foundry

3 credits, Fall/Winter/Spring
6 class hours/week

An advanced level sculpture course for students with some sculpture background. The course will 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. Prerequisites: Pass ART-291, pass ART-292 & pass ART-293 or instructor consent.

ART-290 Advanced Painting

3 credits, Fall/Winter/Spring
6 class hours/week

Advanced painting students concentrate on personal projects and options. Course will build on traditional techniques and skills while emphasizing experimental modes of expression. Assigned readings, critiques, and written projects will be utilized. Prerequisites: Pass ART-281, pass ART-282 & pass ART-283 or instructor consent.

ART-291 Sculpture

3 credits, Fall
6 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.

ART-292 Sculpture

3 credits, Winter
6 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.

ART-293 Sculpture

3 credits, Spring
6 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.

ART-294 Watercolor
2 credits, Fall
4 class hours/week

A beginning level course in the technique and use of watercolor painting. Development of technical skills and expressive development in the medium of transparent watercolor.

ART-295 Watercolor
2 credits, Winter
4 class hours/week

A beginning level course in the technique and use of watercolor painting. Development of technical skills and expressive development in the medium of transparent watercolor.

ART-296 Watercolor
2 credits, Spring
4 class hours/week

A beginning level course in the technique and use of watercolor painting. Development of technical skills and expressive development in the medium of transparent watercolor.

ASC

Arts and Sciences

See also General Science (GS).

ASC-200 Natural Science Inquiry
4 credits, Fall/Winter
3 class, 3 lab hours/week

Introductory course for liberal arts students. Provides interdisciplinary perspective on science and engages students in the collaborative scientific investigation of problems. Methods of scientific investigation, analysis and graphical presentation of data, and scientific writing. ASC-200/201/202 meets the science sequence requirement for the AAOT degree. Prerequisite: Placement in WR-121.

ASC-201 Integrated Science Concepts
4 credits, Winter/Spring
3 class, 3 lab hours/week

Content topics will vary but process will include open-ended research projects focusing on problem posing and problem solving. ASC-200/201/202 meets the science sequence 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

Content topics will vary but process will include writing to learn strategies, individual and collaborative research work, use of computers for data analysis, modeling, writing, and resource access. ASC-200/201/202 meets the science sequence 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. Required: Instructor consent.

ASE-011 General Math
.5 credit, Fall/Winter/Spring/Summer
60 hours/term

Introduction of basic math skills using an integrated approach: addition, subtraction, multiplication and division, including whole numbers, fractions, decimals, graphs and charts. Required: Instructor consent.

ASE-012 Applied Math
.5 credit, Fall/Winter/Spring/Summer
60 hours/term

Review of integrated math fundamentals and introduction to basic concepts of decimals, percentages, measures and geometric shapes. Required: Instructor consent.

ASE-013 Pre-Algebra
.5 credit, Fall/Winter/Spring/Summer
60 hours/term

Basic geometry ration and proportion, positive and negative integers, and simple algebraic concepts. Develops necessary math skills required for demonstration of math competency for employment or for entrance into college mathematics sequence. Required: Instructor consent.

ASE-014 Study Skills
.5 credit, Fall/Winter/Spring/Summer
60 hours/term

Evaluates and reviews study habits, assesses strengths/weaknesses and provides recommendations to match the student with individualized courses/services. Class time is TBA. Required: Instructor consent.

ASE-015 Basic English
.5 credit, Fall/Winter/Spring/Summer
60 hours/term

Review of English fundamentals of grammar, spelling, capitalization, and punctuation. Required: Instructor consent.

ASE-016 Intermediate English
.5 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 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-019 Beginning Composition
.5 credit, Fall/Winter/Spring/Summer
60 hours/term

Develops writing skills focusing on accuracy, brevity, and reader interest as elements of composition. Stresses structure, content, and grammar for themes and short stories. Required: Instructor consent.

ASE-020 Survey of Literature I

.5 credit, Fall/Winter/Spring/Summer
60 hours/term

Course focuses on the elements and examples of prose, poetry, and drama that produce good literature. Required: Instructor consent.

ASE-21 Effective Study Skills

.5 credit, Fall/Winter/Spring/Summer
60 hours/term

Online course 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-22 Developmental English

.5 credit, Fall/Winter/Spring/Summer
60 hours/term

Remedial review of grammar, spelling, capitalization, and punctuation. Required: Instructor consent.

ASE-023 Current Issues in Science

.5 credit, Fall/Winter/Spring/Summer
60 hours/term

Survey of popular scientific publications and videos, covering astronomy, biology, botany, and physics. Topics include overpopulation, species extinction, toxic waste, and genetic engineering. Required: Instructor consent.

ASE-024 Earth Science

.5 credit, Fall/Winter/Spring/Summer
60 hours/term

Survey of the knowledge and skills needed to become a scientifically literate person. Includes the major scientific concepts, principles, theories, laws and processes of earth science; interrelationships between science, technology, society, and careers. Required: Instructor consent.

ASE-026 Health

.5 credit, Fall/Winter/Spring/Summer
60 hours/term

Study of health issues including sexuality, disease and disease prevention, substance use and abuse, emotional and mental health, nutrition, fitness, and effective skill-building. Required: Instructor consent.

ASE-027 Personal Development

.5 credit, Fall/Winter/Spring/Summer
60 hours/term

Identification of personal development problem areas, assess needs, research possibilities, and develop plans of action. Required: Instructor consent.

ASE-028 Global Studies I

.5 credit, Fall/Winter/Spring/Summer
60 hours/term

Examines inter-relationships of world cultures through history, geography, and other social studies disciplines. Required: Instructor consent.

ASE-029 Global Studies II

.5 credit, Fall/Winter/Spring/Summer
60 hours/term

Inter-relationships of world cultures through history, geography, and other social studies disciplines. Global Studies I serves as a foundation for discussion in this course. Required: Instructor consent.

ASE-030 Economics

.5 credit, Fall/Winter/Spring/Summer
60 hours/term

A consumer's introduction to economic, legal and business theory. Required: Instructor consent.

ASE-31 Environmental Science

.5 credit, Fall/Winter/Spring/Summer
60 hours/term

Field-study of the Environmental Learning Center (ELC) site and CCC campus environment through intensive hands-on field study with instructor and guest scientists from local organizations and agencies. Students study water, insects, plants, soils, wildlife and complete a restoration project. Required: Instructor consent.

ASE-032 U.S. History I

.5 credit, Fall/Winter/Spring/Summer
60 hours/term

Surveys events in America's early history through the Civil War and relates them to current history. Also offered online. Required: Instructor consent.

ASE-033 U.S. History II

.5 credit, Fall/Winter/Spring/Summer
60 hours/term

Surveys events in America's history from the reconstruction period to the present and relates them to current issues. Also offered online. Required: Instructor consent.

ASE-034 Government

.5 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 Career Exploration

.5 credit, Fall/Winter/Spring/Summer
60 hours/term

This course is intended for students needing to complete high school credit requirements. Designed to help students assess job skills, career decisions, and employment qualifications. Includes interviewing skills and resumé development. Also offered online. Required: Instructor consent.

ASE-036 Personal Finance

.5 credit, Fall/Winter/Spring/Summer
60 hours/term

Introduces consumer skills including money management, buying decisions, and consumer protection. Required: Instructor consent.

ASE-037 Basic Developmental Reading

.5 credit, Fall/Winter/Spring/Summer
60 hours/term

Develops basic reading skills, including phonics, pronunciation, spelling, word attack skills, and basic vocabulary. Required: Instructor consent.

ASE-038 Intermediate Developmental Reading

.5 credit, Fall/Winter/Spring/Summer
60 hours/term

Word attack, vocabulary, spelling, and reading comprehension skills to improve basic reading abilities. Required: Instructor consent.

ASE-039 Advanced Developmental Reading

.5 credit, Fall/Winter/Spring/Summer
60 hours/term

Develops advanced reading comprehension skills. Required: Instructor consent.

ASE-040 AHSD Competency Center

.5 credit, Fall/Winter/Spring/Summer
60 hours/term

Utilizes individualized lab setting for students satisfying diploma competency requirements. Required: Instructor consent.

ASE-041 AHSD Life Experience Assessment
 .5-7 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 credit
 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
 .5-1.5 credits
 Fall/Winter/Spring/Summer
 60-90 hours/term

Assists teens and parents in building self-esteem and developing parenting and communication skills. Required: Instructor consent.

ASE-047 Physical Education
 .5-1.5 credit
 Fall/Winter/Spring/Summer
 60 hours/term

Designed to develop physical fitness focusing on team-building activities. Required: Instructor consent.

ASE-048 Basic Word Processing
 .5-1 high school credits
 Fall/Winter/Spring/Summer
 60 hours/term

Introduction of the electronic alpha-numeric keyboard. Students practice skills needed to input information and demonstrate an understanding of word processing concepts. Required: Instructor consent.

ASE-051 Intro/Food Preparation/Nutrition
 .5-1 credit
 Fall/Winter/Spring
 60-90 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-053 Winter Ecology Science
 .5 credits, Winter
 60 class hours/term

Presents principles of winter ecology; explores properties of snow crystals, snow pack, snow as habitat; plant, animal, insect, human adaptations to cold. Mid-quarter field trip to Cascade Mountains via snowshoe provides observation of winter first-hand.

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.

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 America 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
 4 credits, Fall
 4 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. Prerequisite: ASL-103 or instructor consent.

ASL-202 American Sign Language
 4 credits, Winter
 4 class hours/week

This course is a 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. Prerequisite: ASL-201 or instructor consent.

ASL-203
 4 credits, Spring
 4 class hours/week

This course is a 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. Prerequisite: ASL-202 or instructor consent.

BA***Business*****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-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 Applied Economics

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. Recommended: Placement in RD-115.

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 WR-121, pass BA-131.

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-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

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. Also offered as an online course. 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/Spring
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. Recommended: Placement in RD-115.

BA-224 Human Resource Management

3 credits, Fall/Spring
3 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. Recommended: Placement in RD-115. Prerequisites: Pass WR-121 & pass BA-205 or instructor consent.

BA-226 Introduction to 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-228 Business Presentations

3 credits, Spring
3 class hours/week

Skills and techniques to design and produce persuasive business presentations, including audience analysis, organization, scripting, graphics, and appropriate presentation technology. Group projects using Microsoft Powerpoint. Recommended: Placement in RD-115. Prerequisite: Pass BA-205 or instructor consent.

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. Prerequisite: Pass BA-101.

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. Prerequisite: Pass BA-101.

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 Introduction to Investments

3 credits, not offered every term
3 class hours/week

Studies securities, investment concepts, and economic trends for the private investor. Discusses investment objectives, portfolios, corporate securities, and securities market. Recommended: Placement in RD-115.

BA-249 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-250 Introduction to Small Business

3 credits, Spring
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. Prerequisite: Pass BA-101.

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. Recommended: Placement in RD-115.

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-265 eManagement

3 Credits, Winter
3 class hours/term

Advanced examination of the Internet as a tool; economic realities of electronic commerce, infrastructure and technologies for specific business activities, business strategies for application of electronic commerce. Prerequisites: Pass BA-101, pass BT-184, and pass WR-121.

BA-266 Advanced eMarketing

3 Credits, Spring
3 class hours/term

Use of the Internet for global marketing efforts. Development of marketing strategy using the Internet for competitive advantage by reaching specific target markets, and for obtaining primary and secondary market research information. Prerequisites: Pass BA-223, pass BT-184, and pass WR-121.

BA-267 Project Team Tools

3 credits, Fall

3 class hours/term

Individuals and work teams 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. Project documentation software. Prerequisites: Pass BA-285 and pass BT-184.

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.

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**

2-4 credits

Fall/Winter/Spring/Summer

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, not offered every term

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-103 Construction Site Preparation

1-6 credits, Summer

4 class, 7 lab hours/week

Develop knowledge of construction layout and material storage for basic building sites. Projects include general survey, underground line locates, erosion control, benchmarks and hubs, contouring.

BC-104 Basic Carpentry

1-6 credits, not offered every term

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-105 Basic Electrical

1-6 credits, not offered every term

4 class, 7 lab hours/week

Research materials, methods, techniques, related code work and safety requirements for basic electrical systems, utilizing metering devices and ohm calculations. Lab projects include applications of residential wiring systems.

BC-106 Basic Plumbing

1-6 credits, not offered every term

4 class, 7 lab hours/week

Research the materials, methods, techniques, related code work and safety requirements for the basic operations of a typical plumbing system. Lab projects include piping, drainage, and venting methods. Students complete projects and develop skills independently.

BC-107 Construction Career Portfolio [C]

1-6 credits

Fall/Winter/Spring/Summer

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-112 Construction Specification Fundamental Practices [C]

1-12 credits, not offered every term

8 class, 14 lab hours/week

Introduction to methods and techniques related to the manufacture, distribution and delivery of building construction materials. Research, develop and write specifications related to the 16 CSI Divisions. Meets computer literacy requirement.

BC-113 Construction Specifications Administration

1-12 credits, not offered every term

8 class, 14 lab hours/week

Application of pricing, estimating, scheduling and paying practices of the construction industry based on the CSI Divisions. Lab projects include organizing and implementing a submittal process, product verification and payment for contract specified materials.

BC-114 Basic Estimating

1-6 credits, not offered every term

4 class, 7 lab hours/week

Develop methods and techniques to analyze drawings, specifications and related information to complete estimates for a construction process. Students will use manual takeoff and computer-assisted applications to produce estimates that meet industry standards.

BC-115 Basic Scheduling

1-6 credits, not offered every term

4 class, 7 lab hours/week

Produce a construction schedule by developing the methods and techniques to analyze drawings, specifications and related information of a construction process. Students will use manual and computer-assisted applications to produce schedules that meet industry standards.

BC-121 Professional Computing for Construction [C]

1-4 credits

Fall/Winter/Spring/Summer
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 MSDs, specifications and use of CAD for communicating design concepts. Meets computer literacy requirement.

BC-180 Building Construction 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 construction trades with a contractor, supplier or construction trades service provider. Required: Instructor consent & a CWE seminar.

BC-201 Project Management I: Developing Project Expectations [C]

1-12 credits, Fall/Winter

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 Project Management II: Managing Project Expectations [C]

1-12 credits, Winter/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 Project Management III: Evaluating Project Expectations [C]

1-12 credits, Spring/Summer

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: Self-Paced Tutorial

1-12 credits

Fall/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 Council of Authorized Building Officials (CABO). Complete and submit tutorial study guides and tests.

BC-205 Commercial & Industrial Codes: Self-Paced Tutorial

1-12 credits

Fall/Winter/Spring/Summer
8 class, 14 lab hours/week

Examine and interpret codes and regulations that govern the commercial and industrial construction industry. Includes researching the Uniform Building Code (UBC), Uniform Mechanical Code (UMC), Uniform Plumbing Code (UPC), the National Electrical Code (NEC). Complete and submit tutorial study guides and tests.

BC-210 Construction Project Scheduling: Advanced [C]

4-12 credits, not offered every term

8 class, 14 lab hours/week

(Available in 4-credit modules)

Introduces critical path project scheduling through integrated computer software applications. Students will develop typical models by researching and analyzing project components. Meets computer literacy requirement.

BC-211 Construction Job-Site Management: Superintendent Roles & Responsibilities

1-12 credits, not offered every term

8 class, 14 lab hours/week

Learn correct principles and concepts that govern a construction superintendent. Develop systems for specific site management operations. System information will be compiled into a site construction manual and presented in a multi-media format.

BC-230 Home Inspection I: Residential Real Estate Property Orientation

1-4 credits

Fall/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. Self-paced, tutorial learning oriented.

BC-231 Home Inspection II: Interior Systems Evaluation

1-4 credits

Fall/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. Self-paced, tutorial learning oriented.

BC-232 Home Inspection III: Exterior Systems Evaluation

1-4 credits

Fall/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. Self-paced, tutorial learning oriented.

BC-280 Construction Projects/CWE

2-6 credits

Fall/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 credits

Fall/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, 2 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, Summer/Fall/Winter
3 class, 3 lab hours/week

A laboratory course for non-science majors. Studies the cellular aspects of biology including genetics. BI-101/102/103 meets the science sequence requirements for the AAOT degree. Also offered as an online course. Recommended: Pass MTH-060; placement in RD-115 & placement in WR-121.

BI-102 General Biology
4 credits, Winter/Spring/Summer
3 class, 3 lab hours/week

A laboratory course for non-science majors emphasizing an evolutionary approach to animal systems. BI-101/102/103 meets the science sequence requirement for the AAOT degree. Also offered as an online course. Prerequisite: Pass BI-101.

BI-103 General Biology
4 credits, Spring/Summer
3 class, 3 lab hours/week

A laboratory course for non-science majors emphasizing an evolutionary approach to plants and ecosystems. BI-101/102/103 meets the science sequence requirement for the AAOT degree. Also offered as an online course. Prerequisite: Pass BI-101.

BI-130 Mushroom ID & Taxonomy
3 credits, Fall, alternate years
3 class hours/week + 3 day field trip

An introductory study. Includes taxonomy, ecology, life history, use of keys, toxicology, cultivation, and collection.

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-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-165 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-165 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-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. Includes cell structure, organization and metabolism, genetics, and evolution. BI-211/212/213 meets the science sequence requirement for the AAOT degree. Recommended: Pass MTH-105 or pass MTH-111; placement in RD-115 & placement in WR-121. Corequisite: CH-121 or CH-221.

BI-212 Biology (Science Majors)
5 credits, Winter
4 class, 3 lab hours/week

A lab course with an evolutionary approach to animal structure and function. BI-211/212/213 meets the science sequence requirement for the AAOT degree. Prerequisite: Pass BI-211. Corequisite: CH-122 or CH-222.

BI-213 Biology (Science Majors)
5 credits, Spring
4 class, 3 lab hours/week

A lab course with an ecological approach to plants and ecosystems. BI-211/212/213 meets the science sequence requirement for the AAOT degree. Prerequisite: Pass BI-212. Corequisite: CH-123 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. BI-231/232/233 meets the science sequence requirement for the AAOT degree. Recommended: Placement in MTH-105 or MTH-111; placement in RD-115 & placement in WR-121. Prerequisites: Pass BI-101 & pass BI-102. Corequisite: CH-104.

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. BI-231/232/233 meets the science sequence requirement for the AAOT degree. Prerequisite: Pass BI-231 & pass CH-104. Corequisite: CH-105.

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. BI-231/232/233 meets the science sequence requirement for the AAOT degree. Prerequisite: Pass BI-232 & pass CH-105.

BI-234 Introductory Microbiology
4 credits, 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. Prerequisites: Pass BI-101 & pass CH-104.

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**

3 credits, Spring

3 class hours/week

A course covering botanical identification emphasizing Native American use of various plants commonly found in the Pacific Northwest and current botanical issues emphasizing Pacific Northwest species and ecology. Some field trips. Recommended: Placement in RD-115 & placement in WR-121.

BOT-201 Botany

4 credits, Fall

3 class, 3 lab hours/week

A lab course covering biochemistry, plant cell structure and function of system of classification, fungi, and gymnosperms. BOT-201/202/203 meets the science sequence 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

3 class, 3 lab hours/week

A lab course covering evolution, speciation, genetics, mitosis, meiosis, growth and development, plant hormones, response to stimuli, and photosynthesis. BOT-201/202/203 meets the science sequence 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

3 class, 3 lab hours/week

A lab course covering flowering plants, their nutrition, transport reproduction, taxonomy, genetic technology, ecology, and distribution. BOT-201/202/203 meets the science sequence 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.

Business Technology**BT-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. Prerequisite: Pass MTH-050.

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 BT-115.

BT-109 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-115.

BT-110 Basic Income Tax

7 credits, Fall

8 class hours/week

Assists income tax preparers in preparing personal income tax returns. Approved by the Oregon State Board of Tax Service Examiners to fulfill the requirements of ORS. 673.605 to 673.735. Prepares the individual to take the State Board Exam in order to be licensed by the Board of Tax Service Examiners.

BT-115 Introduction to General Accounting/Bookkeeping

3 credits, Fall/Winter/Spring

3 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.

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 English 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.

BT-125 Business English 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, Fall

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.

BT-150 Wordperfect for Windows [C]

3 credits, not offered every year

3 class, 2 lab hours/week

Use of basic word processing concepts. Internet includes downloading and copying graphics onto documents and email. Meets computer literacy requirement. Prerequisite: Pass BT-120 or instructor consent

BT-160 MS Word for Windows [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 text, 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 Intermediate Microsoft Word [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 for Windows [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-183 Introduction to eCommerce

3 credits, Fall/Winter/Spring
3 class hours/week

Overview of eCommerce including fundamental models for business to business and business to consumer. Topics include defining eCommerce, development of the World Wide Web, eCommerce processes, online retailing, and online customer relations. Also offered as an online course. Recommended: Placement in RD-115.

BT 184 Basic eBusiness Methods

3 credits, Winter/Spring
3 class hours/week

Using the Internet for business research, peer-networking, information searches, customer access, and customer service, in-depth information on management policies and practices, financial information, organizational behavior, and human resource management. Also offered as an online course. Recommended: Placement in RD-115.

BT-190 Business Graphics

3 credits, Spring
3 class hours/week

Focuses on the effective use of computer-generated graphics to enhance business documents and presentations. Explore appropriate methods for the display of quantitative data and practice basic techniques for creating, importing and exploring computer graphics. Prerequisite: Pass BA-205 or instructor consent.

BT-191 Document Design & Publishing

3 credits, Spring
3 class hours/week

Principles of document design and production for effective communication. Appropriate use of type, page layout techniques, integration of text and graphics, style guides and templates, effective use of color, printing options, and production management. Prerequisite: Pass BA-205 or instructor consent.

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. Prerequisite: Pass BT-120 or instructor consent.

BT 220Q Desktop Publishing I: Quark

XPress
3 credits, not offered every term
3 class, 1 lab hour/week

Introduction to electronic page layout and producing using Quark XPress. Covers fundamental program functions and techniques for working with text and graphics to create professional-looking business publications. Prerequisites: Pass BA-131 or pass CS-121 or instructor consent.

BT-221P Desktop Publishing II:

PageMaker
3 credits, not offered every year
3 class, 1 lab hour/week

Intermediate electronic page layout and production using Adobe PageMaker. Emphasis on practical applications using advanced program functions and techniques to create more complex business publications. Prerequisite: Pass BT-220P.

BT-240 Filing & Records Management

3 credits, Spring
3 class hours/week

Principles and procedures for classifying, storing, retrieving, retaining, and disposing of business records. Includes filing rules, types of filing systems, equipment, supplies, and personnel qualifications. Prerequisite: Pass BT-120 or instructor consent.

BT-262 Advanced Microsoft Word [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 will not transfer with credit to a four-year institution unless otherwise specified.

Computer-Aided Drafting

See also Drafting (CDT).

CAD-141 AutoCAD LT Level I

2 credits

Fall/Winter/Spring/Summer

12 week class, self-paced

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

2 credits

Fall/Winter/Spring/Summer

12 week class, self-paced.

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

2 credits

Fall/Winter/Spring/Summer

32 class hours/2 weeks

AutoCAD basics including 2D drawing, editing, drawing setup, creating and saving drawing templates, display commands and functions, layering techniques, arrays, graphical coordinate input for precision drawing, basic file maintenance, and Windows basics. Recommended: Working knowledge of Windows.

CAD-152 AutoCAD Level II

2 credits

Fall/Winter/Spring/Summer

32 class hours/2 weeks

Drawing and editing polylines, linetype and layer controls. Basic dimensioning and tolerancing and use of dimension variables, hatching and patterns, and advanced editing functions. Recommended: CAD-151.

CAD-153 AutoCAD Level III

2 credits

Fall/Winter/Spring/Summer

32 class hours/2 weeks

Advanced AutoCAD features utilizing blocks and attributes; externally referenced data, model space and paper space layouts, viewport layer control, extracting attribute data, inserting Excel worksheets, and isometric drafting techniques. Recommended: CAD-152.

CAD-154 AutoCAD 3D

2 credits, not offered every term

32 class hours/2 weeks

3D capabilities of AutoCAD including 3D polylines, 3D surface modeling techniques, solid modeling, multiple viewports, and dynamic display of 3D models in perspective. Basic shading and rendering. Recommended: CAD-153

CAD-155 AutoCAD Menu Design

2 credits, not offered every term

32 class hours/2 weeks

Creation and customization of AutoCAD menus including design and use of button menus, screen menus, pull-down and toolbar menus, and creation of macros. Recommended: CAD-153.

CAD-156 AutoLISP I

2 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

2 credits, not offered every term

32 class hours/2 weeks

Advanced AutoLISP functions to create custom commands. Recommended: CAD-156 or equivalent competency.

CAD-251 Autodesk Land Desktop (LDT)

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-153 or AutoCAD experience.

CAD-252 Autodesk Civil Design -

Roadway

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 Civil Design -

Earthworks

2 credits, not offered every term

24 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-254 ArcView GIS

1 credit, not offered every term

16 class hours/term

GIS and CAD as extensions of the data model, incorporating GIS functionality. Models are used for creating topological and spatial database relationships. The models can also be used to exchange information with entities of an AutoCAD drawing database. Course uses the ESRI ArcVIEW software. (Clackamas Community College is an authorized ESRI ArcVIEW Learning Center).

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-261 3D Studio VIZ

1 credit, not offered every term

16 class hours/term

Fundamentals of 3D Studio VIZ software are used to create three dimensional worlds. Environmental texture maps, lighting, camera paths, and modifiers on objects. Build and animate simple hierarchies and produce key frame animations. Recommended: CAD-154.

CAD-270 Introduction to Virtual Reality
1 credit, not offered every term
16 class hours/term

Information and insight into Virtual Reality, how VR may be used in business or school, and creation of a VR world. Hardware and software needs for VR are discussed along with cost options for both.

CAD-271 CAD Virtual Reality
2 credits, not offered every term
32 class hours/term

Use of VR in business or school, creation of a VR world, computer hardware requirements, VR software for your applications, cost, opportunities available in VR today, and the future of VR.

CAD-293 Solid Works
2 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
2 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 otherwise specified.

Drafting

See also Computer-Aided Drafting (CAD).

CDT-101 Drafting Technology Survey
1-2 credits
Fall/Winter/Spring
4 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
1-2 credits, Fall/Winter/Spring
4 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, teamwork, and project planning. 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]

1-2 credits
Fall/Winter/Spring/Summer
2 class, 2 lab 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 and section views.

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 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
2 class, 4 lab 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 kinematical sketches. Recommended: CDT 105 and MTH 80.

CDT-109 Project Drafting I
1-5 credits
Fall/Winter/Spring/Summer
10 class hours/week

Create detail and assembly drawings required to describe a mechanical product. Revise drawings and document revisions based on engineering change requests. Emphasizes use of *Machinery's Handbook*, ASME standards, and vendor information. Recommended: CDT-105 & MTH-080.

CDT-109A Project Drafting I - CAD/CAM
1-2 credits
Fall/Winter/Spring/Summer
2 class, 2 lab hours/week

Draw a set of working drawings for a simple product. Use the drawing to manufacture parts of the project in MFG-210. Recommended: CDT-105.

CDT-110 Kinematics Drafting

1-3 credits, Fall/Spring

6 class hours/week

Machines and mechanisms. Includes symbols and techniques necessary to graphically solve linkage, cam, belt drive, chain drive, and gearing problems. Recommended: CDT-105, CDT-106, MTH-080.

CDT-111 Geometric Dimensioning & Tolerancing

1-3 credits, Summer/Fall

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

28 class hours/term

Principles of Geometric Dimensioning and Tolerancing as interpreted in the ASME Y 14.5M-1994 standard. 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-120 Student Success

1 credit, Fall/Winter/Spring

1 class hour/week

Includes methods for problem solving, note-taking, studying, using resources, asking good questions, brainstorming for solutions, and developing procedures for completing drawings and projects. Covers exploration of learning styles, teaching philosophies, and developing an educational plan.

CDT-201 CAD Menu Design

1-3 credits

Fall/Winter/Spring/Summer

6 class hours/week

Construction of commands for customized AutoCAD menus including the development of button, screen, toolbar, and digitizer menus. No computer programming. Recommended: CDT-105.

CDT-202 Architectural Drafting I

1-4 credits

Fall/Winter/Spring/Summer

8 class hours/week

Methods and 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

Basics of HVAC pattern development, material bending, seams, and intersection of geometric shapes used in the sheet metal fabrication industry. Recommended: CDT-105, CDT-106, MTH-080.

CDT-204 Civil Drafting

1-3 credits, Fall/Winter/Spring

6 class hours/week

Location and direction, scales, map symbols, plot plans, legal descriptions, contours, profiles, and highway layouts. Use of surveying equipment to determine elevations. 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 shop demonstrations of 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

Using AutoLISP to create custom command functions. Recommended: CDT-201.

CDT-208 Schematic Drafting

1-3 credits

Fall/Winter/Spring/Summer

6 class hours/week

Current drafting projects including mechanical, structural, civil, architectural, and electrical drafting. Students develop drawings that include a wide range of experiences in a field of drafting. Recommended. Fifth term standing.

CDT-209 Structural Drafting I

1-3 credits

Fall/Winter/Spring/Summer

6 class hours/week

Methods and drawings of commercial drafting. Projects include 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. Prerequisites: CDT-105, CDT-202.

CDT-210 Industrial Pipe Drafting

1-3 credits, Fall/Winter/Spring

6 class hours/week

Specialized symbols and techniques common to the process piping industry. Visualization through blueprint reading and drawings of piping plans, elevations and isometrics similar to those found in the pulp, chemical, petroleum, and food industries. Recommended: CDT-105, MTH-050.

CDT-211 CAD Illustration/Desktop Publishing

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 logo and letterhead design, use of charts, graphs and tables and imported images in constructing a formal report. Construct a resume and portfolio. Prerequisites: CDT-105, 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 new 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, and CDT-108. Co-requisite: CDT-213.

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. Corequisite: CDT-212A.

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-212.

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-209.

CDT 217 Introduction to Remodeling

1-4 credits, Fall/Winter/Spring

8 class hours/week

Create residential project consisting of design and drafting of multi-level addition to an existing single-family residence. A commercial addition involves the design and drafting for tenant improvements for the warehouse to be completed in CDT-215. Prerequisite: CDT-212.

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 fireplace section. Visit construction sites to view actual practice and document common terms and connection methods by assembling a display of photos. 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. These images are used in a variety of ways to convey content and artistic ability. Scanning of existing images and digital photography is demonstrated. The use of digital paint tools are explored and implemented to create digital images and applied texture maps.

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. Character software is used to make digital characters come to life. The animation is recorded to CD or videotape for use in a portfolio. Recommended: CDT-220.

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, image maps and other professional design concepts. Recommended: CDT-104.

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. Term project involving fixture design using AutoCAD. Recommended: CDT-105 or equivalent experience.

CDT-296 Tool Design II

1-5 credits, Fall/Winter/Spring

10 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. Similar to CH-121 but with emphasis on health related fields. Observation, measurement, composition, stoichiometry, atomic structure, periodic table, bonding, and nomenclature. CH-104/105/106 meets science sequence 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 (particularly in living systems); chemical reactions including acid-base, electron transfer, and equilibrium. CH-104/105/106 meets the science sequence requirement for the AAOT. Also offered as an online + lab course. Prerequisite: Pass CH-104.

CH-106 Introductory Chemistry

5 credits, Spring/Summer

7 class-lab hours/week

Organic and biochemistry. CH-104/105/106 meets the science sequence requirement for the AAOT degree. Also offered as an online + lab course. Prerequisite: Pass CH-105.

CH-121 Introductory College Chemistry

5 credits

Fall/Winter/Spring/Summer

7 class-lab hours/week

Observation, measurement, composition, stoichiometry, atomic structure, and periodic table. Transfer sequence designed for non-science majors. CH-121/122/123 meets science sequence requirement for the AAOT degree. Prerequisite: Pass MTH-065.

CH-122 Introductory College Chemistry

5 credits, Winter/Spring/Summer

7 class-lab hours/week

Heat; molecular interactions in solids, liquids, gases, and solutions; chemical reactions including acid-base oxidation-reduction and equilibrium. CH-121/122/123 meets the science sequence requirement for the AAOT degree. Prerequisite: Pass CH-121.

CH-123 Introductory College Chemistry

5 credits, Spring/Summer

7 class-lab hours/week

Organic, biological, consumer, environmental, and nuclear chemistry. CH-121/122/123 meets the science sequence requirement for the AAOT degree. Prerequisite: Pass CH-122.

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 in chemistry 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. CH-221/222/223 meets the science sequence 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. CH-221/222/223 meets the science sequence 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. CH-221/222/223 meets the science sequence 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. CH-241/242/243 meets the science sequence 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. CH-241/242/243 meets the science sequence 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. CH-241/242/243 meets the science sequence requirement for the AAOT degree. Prerequisite: Pass CH-242.

CIV

Courses with this prefix may 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, concepts of U.S. criminal justice administration. Examines past, present, 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 Oregon Law

3 credits, Fall
3 class hours/week

Examines the elements, purpose and functions of criminal, traffic, juvenile and liquor laws of the State of Oregon.

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-132 Parole & Probation

3 credits, Fall
3 class hours/week

Examines principles and techniques used in parole and probation and presents a critical analysis of each in the administration of criminal justice. Discusses both the parole/probation system and a determinate system of sentencing. 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.

CJA-135 Unarmed Private Security

0 credit
Fall/winter/Spring/Summer
12 class hours/term

Provides the training required by Dept on Public Safety Standards & Training (DPSST) for certification as unarmed private security officer in Oregon. Includes department, ethics, legal powers and limitations; fire detection, reporting and safety procedures. May not be offered every term.

CJA-136 Unarmed Private Security Refresher

0 credit
Fall/Winter/Spring/Summer

Provides training required by DPSST for recertification as unarmed private security officer in Oregon. Includes department, ethics, legal powers and limitations; fire detection, reporting and safety procedures. Recertification is required annually to meet DPSST standards. May not be offered every term.

CJA-137 Mass Murders/Serial Killers

3 credits, not offered every term
3 class hours/week

Exploration into mass murders and serial killings, and impact each has on society and individual victims. Examine issues of causation and social environmental linkage of recent and notorious cases and the mind set of the offenders.

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 and community tension, minority group crime, social forces, community policing and police image.

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 observing and interpreting behavior, the use of structured questions to determine truthfulness.

CJA-220 Substantive Law

3 credits, Winter
3 class hours/week

Historical development, philosophy of law and constitutional provisions, defining and classification of crime, application to the system of 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-230 Juvenile Corrections

3 credits, Spring
3 class hours/week

Studies historical and contemporary perspectives on juvenile offenders, the juvenile code and 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-to-one contacts with clients. Stresses positive relationships and behavior modification related to the reintegration process.

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.

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.

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**

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.

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 term
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 term
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

Survey course to familiarize students with computers. Computer terminology, how a computer works, the computer's effect on society. Word processing, spreadsheet, database management, graphics, e-mail, Internet, Windows, presentation graphics, and file management. Meets computer literacy requirement. Also 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 Web Site Design & HTML
3 credits
Fall/Winter/Spring/Summer
3 class hours/week

Hands-on approach to planning, design, development, and maintenance of Internet web sites and Web pages using HTML and/or automated tools. Also offered as an online course. Recommended: Pass CS-121.

CS-133F FORTRAN
2 credits, not offered every term
2 class hours/week

Introduction to numerical problem solving using FORTRAN. Prerequisites: Pass CS-120; pass MTH-111 or 4 years high school math.

CS-133S Web Application Development I
3 credits, Fall
3 class hours/week

Introduces the design, programming and testing of scripted web pages and server submittal. Fundamental concepts of smart interactive web pages, simple program control statements (sequence, conditional statements, repetition), variables, scope, arrays, sub procedures, functions, debugging. Also offered as an online course. Prerequisites: Pass CS-135I or CS-135J; pass MTH-065 or pass MTH-092.

CS-133VB Visual Basic I
3 credits, Fall/Winter/Spring
3 class hours/week

Hands-on approach to software design and development using a structured, component-based programming language with an object-oriented, event driven approach. Planning an application, building user interfaces, using variables and constants, making decisions, functions, multiple forms. Prerequisites: Pass CS-121; pass MTH-065 or pass MTH-092.

CS-135DB Advanced Database
3 credits, Fall/Spring
3 class hours/week

Design, construction, and documentation of database management systems using Access. 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/Winter/Spring/Summer
3 class hours/week

Plan and publish professional web sites by exploring a variety of software tools. Utilize existing scripts, audio, video, graphics and other emerging technologies. Includes extensive use of the Internet. Also offered as an online course. Prerequisite: Pass CS-125H.

CS-135S Advanced Spreadsheet
3 credits, Fall/Spring
3 class hours/week

Design, construction, and documentation of advanced spreadsheets using Excel. 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/Summer
3 class hours/week

Advanced word processing features using Word. 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-140D Operating Systems I: DOS
3 credits, Winter
3 class hours/week

This class is an in-depth study of the Disk Operating System (DOS) commands and their syntax. Use a computer system to execute problem-solving exercises using DOS commands, strong emphasis on batch files. DOS networking is introduced. Also offered as an online course. Prerequisites: Pass CS-140W & 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, process management, network utilities, text editing, shell environment configuration, shell script programming. Also offered as an online course. Prerequisite: Pass CS-140W.

CS-140W Operating Systems I: Windows
4 credits, Fall/Spring
4 class hours/week

Introduction to computer operating systems using Windows. Hardware selection for Windows 98, network connectivity, Windows 98 registries, configuring user environments, managing security, setting up fault tolerance, system tuning and optimization, dial-up networking, and Internet connections. Prerequisites: Pass CS-120, pass MTH-065 & pass WR-095.

CS-160 Computer Technician Orientation
2 credits, Fall/Spring
2 class hours/week

Introduction to computing topics such as problem solving, algorithms, operating systems, programming, and computer architecture. 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, Winter
33 online 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 term
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-195 Website Technologies I
3 credits, not offered every term
3 class hours/week

Working with and exploring emerging technologies on the web today. Includes web graphics, multimedia, streaming video, streaming audio, defining your web presence and web voice. Scanning techniques, digital imaging and manipulation. Also offered as an online course. Prerequisite: Pass CS-135I.

CS-225 Computer End User Support
3 credits, Fall
3 class, 1 lab hour/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. Prerequisite Pass CS-120 & pass WR-095.

CS-227 PC Hardware & Repair I
4 credits, Summer/Winter
6 class-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-140W & pass MTH-065.

CS-228 PC Hardware & Repair II
4 credits, Fall/Spring
6 class-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/Winter
6 class-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

Emphasis on understanding concepts and techniques, practicing with a variety of client and server scripting tools. Client JavaScript and server Active Server Pages with VBScript, Java Server Pages and Servlets, cgi with Perl, and XML. Also offered as an online course. Prerequisite: Pass CS-133S.

CS-233VB Visual Basic II
3 credits, Fall/Winter
3 class hours/week

Continuation of CS-133VB. List boxes, combo boxes, printing, string manipulation, looping, arrays, object-oriented programming, file handling (sequential files, random access files, database files). Prerequisite: Pass CS-133VB.

CS-234S Web Application Development III
3 credits, Spring
3 class hours/week

Continuation of CS-233S. Administering a web site from both the client side and server side. Designing, developing, and implementing a web site, providing database connection to a website, uploading to and maintaining a web server. Also offered as an online course. Prerequisite: Pass CS-233S.

CS-234VB Visual Basic III
3 credits, Spring
3 class hours/week

Continuation of CS-233VB. Topics include basic SQL (Select, Insert, Update, Delete), ADO programmatic recordsets, ActiveX controls, OOP, and Component Object Model (COM) programming. Prerequisite: Pass CS-233VB.

CS-235 Visual Basic for Applications

3 credits, Spring
3 class hours/week

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 with VBA. Prerequisite: Pass CS-135DB or pass CS-135S or pass CS-135W.

CS-240U Operating Systems II: Linux/Unix

3 credits, Winter
3 class hours/week

Hands-on system administration of Linux/Unix. Installation, system configuration, X Windows 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, serial and parallel ports and devices, basic local area networking, memory management. Prerequisite: Pass CS-140U.

CS-240W Operating Systems II: Windows

3 credits, Winter/Summer
3 class, 1 lab hour/week

Introduces the major functions and features of Windows 2000 Professional. Include installation, file system profiles and policies, security, protocols, internetworking, remote access, printing, and troubleshooting. Focuses on Windows 2000 as a client operating system. Prerequisite: Pass CS-140W.

CS-244 Systems Analysis

3 credits, Winter/Summer
3 class hours/week

Overview of the Systems Development Life Cycle emphasizing analytical techniques to develop the correct definition of business problems and project management techniques. Students will prepare a feasibility assessment and develop system requirements for a project. Also offered as an online course. Prerequisite: Pass CS-135DB.

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 Programming

4 credits, Spring
4 class hours/week

Covers the analysis, specification, design and implementation of database applications using a PC based database language. User interface design, client server, and an introduction to SQL. Prerequisites: Pass CS-233VB & pass CS-135DB.

CS-278 Data Communications Concepts

3 credits, Winter/Summer
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-279N LAN I: Novell Administration

4 credits, Winter
6 class-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, trouble shooting of the Novell network operating system. Prerequisites: Pass CS-140W & pass CS-278.

CS-279W LAN I: Windows Server Administration

4 credits, Fall/Spring
6 class-lab hours/week

Installation, configuring, and administering Windows 2000 Server. Topics include security, performance enhancement, user management, printer installation and management. Prerequisite: Pass CS-240W & pass CS-278.

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-140W & pass CS-160.

CS-288N LAN II: Novell WAN

4 credits, not offered every term
6 class-lab hours/week

Issues involved with interconnecting multiple LANs to form an internetwork using Novell Netware. Network protocols (TCP/IP, etc.), bridges, routers, connections to the Internet, web servers. Hands-on experience with hardware and software. Prerequisite: Pass CS-279N.

CS-288U Linux/Unix Internetworking

3 credits, Spring
3 class hours/week

Advanced system administration of Linux/Unix systems, with a focus on internetworking, interoperating, connection to the Internet, creating a dial-up access system, tools specific to Linux in a networked environment. Emphasizes connectivity to Novell and Microsoft networks. Prerequisite: Pass CS-240U.

CS-288W LAN II: Windows WAN

4 credits, not offered every term
6 class-lab hours/week

Issues involved with interconnecting multiple LANs to form an internetwork using Windows. Network protocols (TCP/IP, etc.), bridges, routers, connections to the Internet, web servers. Hands-on experience with hardware and software. Prerequisite: Pass CS-279W.

CS-295 Website Technologies II

3 credits, not offered every term
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/server side applications incorporated into the project, demonstrating use of digital imaging, streaming media, multimedia concepts. Prerequisites: Pass CS-195 & instructor consent.

CS-295E FrontPage & Web Design for Educators

1 credit, not offered every term
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 Computers/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, III, and IV of MS-Excel.

CW-053 Internet

Fall/Winter/Spring/Summer
12 class hours

Workshops offered include Dreamweaver Internet Fundamentals, FrontPage Levels I & II, and Web Design I & II.

CW-054 Word Processing

Fall/Winter/Spring/Summer
12 class hours

Workshops offered include Levels I, II, and III of MS-Word.

CW-055 Software Applications

Fall/Winter/Spring/Summer
9 class hours

Workshops offered include MS-Powerpoint.

CW-056 Database Applications

Fall/Winter/Spring/Summer
12 class hours

Workshops offered include Levels I, II, and III of MS-Access.

CWE

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:

BA-280	Accounting
BA-280	Accounting Clerk
AM-280/281	Auto Mechanics
BA-280	Business Technology
BC-180/280	Building Construction
AB-280	Collision Repair
ABR-180	Collision Repair Refinishing
CS-280	Computer Science
CJA-280/281	Criminal Justice Corrections/Juvenile Corrections
CDT-280	Drafting
ECE-280	Early Childhood Ed.
ED-280	Environmental Ed.
HS-280	Gerontology
HE-280	Health
HOR-280/281/282	Horticulture
ED-280	Instructional Assistant
MFG-280	Manufacturing
BA-280	Marketing
BA-280	Office Assistant
ED-280	Tutor

Transfer Program Cooperative Work Experience Classes:

ANT-280	Anthropology
ART-280	Art
BA-280	Business Administration
BI-280	Biology
CJA-280/281	Criminal Justice/Corrections
ED-280	Education
ENG-280	English
G-280	Geology
GEO-280	Geography
HST-280	History
J-280	Journalism/Public Relations
MTH-280	Mathematics
MUS-280	Music
PE-280	Physical Education
PH-280	Physics
PS-280	Political Science
PSY-280	Psychology
R-280	Religion
SOC-280	Sociology
SP-280	Speech
SPN-280	Spanish
TA-280	Theatre Arts

EC***Economics*****EC-115 Introduction to Basic Economics**
3 credits, not offered every year
3 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. 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. EC-201/EC-202 meets the Social Science Sequence 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. EC-201/EC-202 meets the Social Science Sequence requirement for the AAOT degree. Also offered as a telecourse. Recommended: Placement in RD-115.

EC-215 American Economic History
3 credits, not offered every year
3 class hours/week

Studies the historical development of economic institutions in the United States. Includes industry, agriculture, transportation, labor and financial institutions. EC-215/216/230 meets the social science requirement for the AAOT degree. Also offered as HST-205. Recommended: Placement in RD-115.

EC-216 Introduction to Labor Economics
3 credits, not offered every year
3 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. EC-215/216/230 meets the Social Science Sequence requirement for the AAOT degree. Also offered as HST-204. Recommended: Placement in RD-115.

EC-230 International Economics
3 credits, not offered every year
3 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. EC-215/216/230 meets the Social Science Sequence requirement for the AAOT degree. Also offered as HST-206. Recommended: Placement in RD-115.

ECE

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

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 childrens' 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, Fall/Winter/Spring
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, 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.

ED***Education*****ED-110 Psychology of Learning****3 credits, Spring****33 class hours/term**

Applies theories of behavior, motivation, and human development to classroom practice and teaching/tutoring techniques. Required: Program coordinator consent.

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-123 Classroom Techniques in Reading & Language Arts**3 credits, Fall****3 class hours/week**

Introduces skills/techniques applied in supplemental reading instruction with elementary age students. Includes reading for meaning using the four cueing systems: comprehension strategies, developing sight/meaning vocabulary, connecting reading/writing, understanding appropriate uses of graphophonics.

ED-124 Classroom Techniques in Math & Science**3 credits, Fall****3 class hours/week**

Prepares instructional assistant to help children learn specific mathematical content (facts, skills, concepts), apply mathematical concepts to solve problems, and develop a positive attitude toward mathematics. Math concepts are: patterns, estimation, graphing, addition, subtraction, multiplication, division, and fractions. Required: Program coordinator consent.

ED-125 Tutor Certification I**1 credit, Fall/Winter/Spring****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, Winter****10 hours/term**

Covers characteristics of adult learners, learning styles, cultural awareness, inter-cultural communications, and tutoring specific subjects. Required: Program coordinator consent.

ED-127 Tutor Certification III**1 credit, Spring****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, Winter****3 class hours/week**

Provides a foundation in comprehensive classroom management theory and application related to emotional education, management techniques, and problem solving for effectively handling unproductive student behaviors in the classroom, the cafeteria, assemblies, on the playground, and on field trips. Required: Program coordinator consent.

ED-131 Teaching Strategies**3 credits, Fall****3 class hours/week**

Introduces teaching techniques and provides practice through lesson planning and peer teaching. Instructional assistants will plan lessons, teach these lessons to small groups of peers, and participate in self-evaluation and peer evaluation of teaching skill. Required: Program coordinator consent.

ED-212 Schools & Society**3 credits, Winter****3 class hours/week**

Introduces an overview of public education in the US. Explores current purposes and practices in relation to historical and philosophical issues. Addresses the organization, financing, and operation of local school districts. Required: Program coordinator consent.

ED-213 Advanced Instructional Techniques in Reading**3 credits, Winter****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 & Science**3 credits, Spring****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-235 Instructional Technology

3 credits, Summer
3 class hours/week

Introduces current advanced technology available in education, and provides tools and practice in evaluating, selecting, and implementing appropriate technology in instruction. Required: Program coordinator consent.

ED-258 Multicultural Education

3 credits, Summer
3 class hours/week

Introduces the philosophy, activities, and materials applied in developing a culturally sensitive multi-cultural classroom and curriculum. Required: Program coordinator consent.

ED-268 Educating Mild/Severely Disabled

3 credits, Summer
3 class hours/week

Introduces theory and techniques for working with handicapped students. Addresses services and funding provided for mildly and severely handicapped students. Required: Program coordinator consent.

ED-269 Overview of Students with Special Needs

3 credits, Spring
3 class hours/week

Introduces handicapping/medical conditions to recognize, plan for, and understand for instruction/tutoring. Includes: learning disabilities, mental retardation, severe emotional disturbances, physical handicaps, health impairments, autism, traumatic brain injuries, Toruette Syndrome, Attention Deficit Disorder. Required: Program coordinator consent.

ED-280 Instructional Assistant/CWE

3-6 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 Education/CWE

3-6 credits
Fall/Winter/Spring/Summer
1.5 class, 6-18 job site hours/term

Cooperative work experience. Provides students with on-the-job work experience in the field of education. Required: Instructor consent & a CWE seminar.

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.

EL**Reading/Study Skills**

See also Reading (RD) and Study Skills (SS)

EL-111 College Study Skills

3 credits
Fall/Winter/Spring/Summer

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 (formerly RD-012).

EMT

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

Emergency Medical Technician**EMT-101 EMT Basic Part I**

5 credits, Fall/Winter
6 class, 3 lab hours/week

Develops skills and training at the basic life support (BLS) level. Focuses on BLS airway care, patient assessment, illness/injury recognition, roles and responsibilities, EMS systems, operations, anatomy, pathophysiology, medical emergencies and basic care. Recommended: Placement in RD-115, placement in WR-121, and placement in MTH-065. Prerequisite: AHA CPR - Health Care Provider or equivalent.

EMT-102 EMT Basic Part II

5 credits, Winter/Spring
6 class hours/week

Continuation of EMT 101. Prerequisite: Pass EMT-101. Corequisite: EMT-103.

EMT-103 EMT Basic Clinical

2 credits, Winter/Spring
3 lab hours/week, 10 hour observation in hospital emergency room, 5 calls on ALS ambulance or fire department rescue/transportation unit

Observational field experience in a hospital emergency room and ALS ambulance or fire department. Current procedures in the care and treatment of the sick and injured prior to hospital admission. Successful completion of EMT-101/102/103 necessary to apply for State certification. Corequisite: EMT-102.

EMT-105 Introduction to Emergency Medical Services

3 credits, Fall
3 class hours/week

Covers role and responsibilities of the emergency medical technician, organization and function of emergency medical systems, medical-legal and cultural diversity considerations, major incident response, hazardous materials awareness, stress management, and survey of professional career.

EMT-106 Emergency Communication & Patient Transportation

3 credits, Spring
3 class hours/week, 16 lab/observation hours/term

Ambulance operation, laws, maintenance, and safety; emergency response driving and route planning; communication systems, radio types, HEAR system, codes and correct techniques. Prerequisite: EMT-101.

EMT-107 EMT Rescue

3 credits, Spring
3 class hours/week, 16 lab/observation hours/term

Elementary procedures and tools of rescue practices, systems, components, support and control of rescue operations. Introduces patient extrication, emphasizing application to traffic accidents, as required for EMT certification. Prerequisite: EMT-101.

EMT-110 Oregon EMT Intermediate
10 credits, Fall
5 class, 4 lab hours/week

Two-term course covers theory and practice of the EMT Intermediate in the state of Oregon. Covers intermediate level airway management, IV therapy, pharmacology, drug calculations, etc. Successful completion required to take state certification examination. Prerequisites: Pretest and EMT Certified Basic.

ENG

English

ENG-104 Introduction to Literature: Fiction
3 credits

Fall/Winter/Spring/Summer
3 class hours/week

Introduction to American and international short fiction. ENG-104/105/106 meets the Arts & Letters Sequence requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

ENG-105 Introduction to Literature: Drama
3 credits

Fall/Winter/Spring/Summer
3 class hours/week

Introduction to American and international drama. ENG-104/105/106 meets the Arts & Letters Sequence requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

ENG-106 Introduction to Literature: Poetry
3 credits

Fall/Winter/Spring/Summer
3 class hours/week

Introduction to American and international poetry. ENG-104/105/106 meets the Arts & Letters Sequence requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

ENG-107 World Literature
3 credits, Fall
3 class hours/week

The Ancient World: epic, lyric, and dramatic literature with emphasis on Greek, Roman, and Hebrew works. ENG-107/108/109 meets the humanities and arts sequence requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

ENG-108 World Literature
3 credits, Winter
3 class hours/week

The Dark Ages through the Enlightenment, emphasizing Cervantes, Dante, and Voltaire. ENG-107/108/109 meets the Arts & Letters Sequence requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

ENG-109 World Literature
3 credits, Spring
3 class hours/week

The Romantics through modern times, ranging from Russia to Nigeria and Colombia. ENG-107/108/109 meets the Arts & Letters Sequence requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

ENG-116 Vocabulary Building
3 credits, not offered every year
3 class hours/week

Covers advanced vocabulary and Greek-Latin root word system. Provides familiarity with concepts included on some standardized entrance exams and in the academic and work worlds. Meets some elective/humanities requirements. Recommended: Placement in RD-115 & placement in WR-121.

ENG-121 Mystery Fiction
3 credits, not offered every year
3 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. Recommended: Placement in RD-115 & placement in WR-121.

ENG-125 Oregon Literature
3 credits, not offered every year
3 class hours/week

Representative study of Oregon writers in fiction, poetry, and the ballad. Recommended: Placement in RD-115 & placement in WR-121.

ENG-201 Shakespeare
3 credits, Fall
3 class hours/week

Study of significant plays and sonnets. Selected comedies, histories and tragedies covered each term. ENG-201/202/203 meets the Arts & Letters Sequence requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

ENG-202 Shakespeare
3 credits, Winter
3 class hours/week

Study of significant plays and sonnets. Selected comedies, histories, and tragedies covered each term. ENG-201/202/203 meets the Arts & Letters Sequence requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

ENG-203 Shakespeare
3 credits, Spring
3 class hours/week

Study of significant plays and sonnets. Selected comedies, histories, and tragedies covered each term. ENG-201/202/203 meets the Arts & Letters Sequence requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

ENG-204 Survey of English Literature
3 credits, Fall
3 class hours/week

Fourth to 17th century. Includes early legends, myths, the works of Chaucer and Shakespeare, and 17th century poems and essays. ENG-204/205/206 meets the Arts & Letters Sequence requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

ENG-205 Survey of English Literature
3 credits, Winter
3 class hours/week

17th to mid-19th century. Includes English epic, satire, poetry, and essay; works by Milton, Blake, Swift, and others. ENG-204/205/206 meets the Arts & Letters Sequence requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

ENG-206 Survey of English Literature
3 credits, Spring
3 class hours/week

19th and 20th century. Representative works and writers from the late Romantic movement to present day. ENG-204/205/206 meets the Arts & Letters Sequence requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

ENG-210 Modern American Indian Literature

3 credits, not offered every year
3 class hours/week

Emphasizes contemporary fiction and poetry, including works of James Welch, Leslie Silko, and Scott Momaday. Recommended: Placement in RD-115 & placement in WR-121.

ENG-215 Literature of the Beat Generation

3 credits, not offered every year
3 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. Recommended: Placement in WR-121.

ENG-250 Mythology

3 credits, Fall
3 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. ENG-250/251/252 meets the Arts & Letters Sequence requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

ENG-251 Mythology

3 credits, Winter
3 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. ENG-250/251/252 meets the Arts & Letters Sequence requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

ENG-252 Mythology

3 credits, Spring
3 class hours/week

Myths of non-Western cultures, such as Native American, African, or Asian. 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. ENG-250/251/252 meets the Arts & Letters Sequence requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

ENG-253 American Literature

3 credits, Fall
3 class hours/week

Pre-Colonial to mid-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. ENG-253/254/255 meets Arts & Letters Sequence requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

ENG-254 American Literature

3 credits, Winter
3 class hours/week

Mid-19th century to early 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. ENG-253/254/255 meets Arts & Letters Sequence requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

ENG-255 American Literature

3 credits, Spring
3 class hours/week

Early 20th century to the present. Surveys the development of American fiction, nonfiction, poetry, and drama through the study of the works of both major and lesser known writers. ENG-253/254/255 meets Arts & Letters Sequence requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

ENG-260 Introduction to Women Writers

3 credits, not offered every year
3 class hours/week

Study of women writers and women's roles in plays, poems, and fiction. Recommended: Placement in RD-115 & placement in WR-121.

ENG-266 The Literature of War

3 credits, not offered every year
3 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. Recommended: Placement in RD-115 & placement in WR-121.

ENG-275 The Bible As Literature

3 credits, not offered every year
3 class hours/week

Historical and literary approach to the Old and New Testaments. Recommended: Placement in RD-115 & placement in WR-121.

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 ESL students.

English Non-Native Language**ENL-117 Advanced Grammar A**

3 credits, Fall/Winter/Spring
3 class, 1 lab hours/week

Part A of a 2-part series designed for advanced level non-native speakers of English to gain proficiency/accuracy in subordination and coordination of ideas. Adverbial clauses, discourse connectors, adverb phrases, and noun clauses are covered. Required: Instructor consent. Corequisite: ESL-070.

ENL-118 Advanced Grammar B

3 credits, Fall/Spring
3 class, 1 lab hours/week

Part B of a 2-part series designed for advanced level non-native speakers of English to gain proficiency/accuracy in written and oral expression, with emphasis on written usage. Count/noncount nouns, definite/indefinite articles, modals, conditional sentences. Required: Instructor consent. Corequisite: ESL-070.

ENL-119 Advanced Reading/Writing
6 credits
Fall/Winter/Spring/Summer
6 class hours/week

Designed for advanced level students to improve academic reading, writing, and editing skills. Required: Instructor consent.

ENL-120 Advanced Communication Skills
3 credits, not offered every term
3 class, 1 lab hours/week

Designed for advanced non-native speakers of English to gain fluency in speaking and listening in the contexts of school, work, family and community. Prepares students for success in discussions, interviews, conferences and presentations. Required: Instructor consent.

ESL

Courses with this prefix may 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

Designed for adult students to meet one-on-one or in a small group 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-012 Work Ready 1
0 credit, not offered every term
3-6 class hours/week

Beginning level of three levels to prepare non-native speakers of English for employment with emphasis on life skills necessary for everyday life in the United States, developing vocabulary, and helping students improve their oral communication, reading, writing skills with the goal of gaining or improving employment. Required: Instructor consent.

ESL-013 Work Ready 2
0 credit, not offered every term
3-6 class hours/week

Upper beginning level of three levels to prepare non-native speakers of English for employment with emphasis on life skills necessary for everyday life in the United States, developing vocabulary, and helping students improve their oral communication, reading, writing skills with the goal of gaining or improving employment. Required: Instructor consent.

ESL-014 Work Ready 3
0 credit, not offered every term
3-6 class hours/week

Intermediate level of three levels to prepare non-native speakers of English for employment with emphasis on life skills necessary for everyday life in the United States, developing vocabulary, and helping students improve their oral communication, reading, writing skills with the goal of gaining or improving employment. Required: Instructor consent.

ESL-015 Work Ready 4
0 credit, not offered every term
3-6 class hours/week

Designed for English as a Second Language students who want job-seeking and pre-job training skills while improving their English. Required: Instructor consent.

ESL-018 Assess/Evaluation for New Students
0 credit
Fall/Winter/Spring/Summer
2 hours/term

Designed for new students in the adult ESL program to give information about classes offered, departmental and college policies, college services available, campus facilities, and community resources. Students participate in goal setting activities and are shown different ways to organize classroom materials. Required: Instructor consent.

ESL-019 Educational Planning/Evaluation
0 credit
Fall/Winter/Spring/Summer
2 hours/term

Designed for returning adult ESL students to meet with instructors to review progress, revisit goals and plan how to transition to other educational and training opportunities at the college and in other community programs. 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-023 Life Skills 3
0 credit, not offered every term
3-6 class hours/week

Designed to improve students' listening, speaking, reading, writing, grammar, and vocabulary at the intermediate level and above. Students' language skills are improved in the contexts of work, family and community. Required: Instructor consent.

ESL-024 English for the Family
0 credit, not offered every term
132 hours/term

Improves self-sufficiency of families by enabling parents to meet goals, increase language literacy levels, enhance skills/experiences related to employability. Children in the family ages 0-7 attend either pre-school classes or local elementary school. Required: Instructor consent.

ESL-025 Beginning Read/Write for Daily Life

0 credit, not offered every term
3 class hours/week

Designed to improve reading and writing skills as needed for the workplace and everyday life. Includes signs, advertisements, forms, warranties, labels, directions, receipts, school and work correspondence, and applications. Required: Instructor consent.

ESL-028 Intermediate Read/Write for Daily Life

0 credit, not offered every term
3 class hours/week

Designed to improve reading and writing skills at the intermediate level as needed for the workplace and everyday life. Includes letters, applications, forms, directions, reports, and other texts encountered in daily life. Course content provided by the textbook and real life materials. Required: Instructor consent.

ESL-032 Low Intermediate Conversation

0 credit
Fall/Winter/Spring/Summer
3 class hours/week

Designed for low intermediate non-native speakers of English to gain fluency in speaking and listening in functional contexts. Required: Instructor consent.

ESL-033 Intermediate Conversation

0 credit
Fall/Winter/Spring/Summer
3 class hours/week

Designed for intermediate non-native speakers of English to gain fluency in speaking and listening in functional contexts. Required: Instructor consent.

ESL-034 Upper Intermediate Conversation

0 credit, not offered every term
3 class hours/week

Designed for upper intermediate non-native speakers of English to gain fluency in speaking and listening in the following areas: expressing opinions, gathering and recording information, giving prepared presentations, and participating in group discussions. Required: Instructor consent.

ESL-035 Advanced Communication Skills

0 credit, not offered every term

3 class, 1 lab hours/week

Designed for advanced non-native speakers of English to gain fluency in speaking and listening in the contexts of school, work, family and community. Prepares students for success in discussions, interviews, conferences and presentations. Required: Instructor consent.

ESL-040 Beginning Grammar

0 credit, not offered every term

3 class hours/week

Designed for beginning non-native speakers of English to gain grammatical accuracy; use of the verb "to be", simple present verb tense, nouns, descriptive/possessive adjectives, simple sentence structures in oral/written communication used for everyday living. Required: Instructor consent.

ESL-041 Upper Beginning Grammar

0 credit

Fall/Winter/Spring/Summer

3 class hours/week

Designed for upper beginning level non-native speakers of English to gain grammatical accuracy in the use of verb tenses, modals, adverbs of frequency, and comparative adjectives in oral and written communication. Required: Instructor consent.

ESL-043 Intermediate Grammar

0 credit

Fall/Winter/Spring/Summer

3 class hours/week

Designed for intermediate level non-native speakers of English to gain grammatical accuracy in the use of verb tense and modals and related forms in oral and written communication. Required: Instructor consent. Corequisite: ESL-070.

ESL-044 Upper Intermediate Grammar

0 credit

Fall/Winter/Spring/Summer

4 class hours/week

Designed for the upper intermediate non-native speaker of English to help consolidate and refine accuracy of verb tenses and gain knowledge of verb forms, voice, gerunds, infinitives, and relative clauses. 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 designed for advanced level non-native speakers of English to gain proficiency/accuracy in subordination and coordination of ideas. Adverbial clauses, discourse connectors, adverb phrases, and noun clauses are covered. Required: Instructor consent.

ESL-046 Advanced Grammar B

0 credit, Fall/Spring

3 class, 1 lab hours/week

Part B of a 2-part series designed for advanced level non-native speakers of English to gain proficiency/accuracy in written and oral expression, with emphasis on written usage. Count/noncount nouns, definite/indefinite articles, modals, conditional sentences. Required: Instructor consent.

ESL-050 Beginning Reading/Writing

0 credit

Fall/Winter/Spring/Summer

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.

ESL-051 Upper Beginning Reading/Writing

0 credit

Fall/Winter/Spring/Summer

3 class hours/week

Designed for the upper beginning level student who reads and writes at the sentence level. Read short texts and write groups of related sentences in paragraph form. Required: Instructor consent.

ESL-053 Intermediate Reading/Writing

0 credit

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 college courses, the workplace, and everyday life. Required: Instructor consent.

ESL-054 Upper Intermediate Reading/Writing
0 creditFall/Winter/Spring/Summer
6 class hours/week

Designed for non-native speakers to develop 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 creditFall/Winter/Spring/Summer
6 class hours/week

Designed for advanced level students to improve 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-060 Pronunciation
0 credit, not offered every term

3 class, 1 lab 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.

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

3 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

Designed to demonstrate how to operate a computer to improve English language skills by using language learning software. Required: Instructor consent.

ESL-071 Listening Lab

0 credit, not offered every term

3 lab hours/week

Improve aural comprehension by listening to audio tapes and following along in books. Required: Instructor consent.

ESL-072 Reading/Writing Workshop

0 credit, not offered every term

3 class hours/week

Designed for the low intermediate to upper intermediate level ESL student to improve reading and writing skills as needed for more advanced ESL and college courses, in the workplace, and in everyday life. Writing focus is on paragraph level writing. Required: Instructor consent.

ESL-080 Intermediate Reading Skills

0 credit, not offered every term

3 class hours/week

Designed for non-native speakers to develop the reading skills needed to succeed in college and in everyday life. Required: Instructor consent.

ESL-081 Upper Intermediate Reading Skills

0 credit, not offered every term

3 class hours/week

Designed for non-native speakers to develop reading skills needed to succeed in college and in everyday life. Required: Instructor consent.

ESL-084 Spelling/Vocabulary Building

0 credit, not offered every term.

3 class hours/week

Designed to extend upper intermediate to advanced level students' vocabulary range and strengthen spelling ability. Required: Instructor consent.

ESL-085 TOEFL Preparation

0 credit, not offered every term

1 class, 2 lab hours/week

Designed for advanced level ESL students to prepare for the Test of English as a Foreign Language (TOEFL) examination by improving language skills and familiarizing them with the test, test-taking techniques, strategies and computer skills. Required: Instructor consent.

ESL-086 Wordprocessing/Email/Internet
0 credit, not offered every term

2 class, 1 lab hours/week

Basic introduction to wordprocessing, email, and the Internet for students at intermediate level and above. Use computer tools to improve English proficiency for success in academic, workplace and daily life. Required: Instructor consent.

ESL-087 Intro/Intercultural Communication

0 credit, not offered every term

3 class hours/week

Explores impact cultural differences have on communication process, increases awareness of students' own cultural behaviors. Discover effective ways to deal with difficult situations where a cultural difference causes a problem. Required: Instructor consent.

ESL-088 Bridge to College
0 credit, Spring

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.

ESH

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

Environmental Safety & Health**ESH-100 Environmental Regulations**

1-3 variable credits

Fall/Winter/Spring/Summer

Online course. 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
Online course. 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/>

ESR

Courses with these prefixes may not transfer with credit to a four-year institution.

Environmental Science

ESR-171 Environmental Science
4 credits, Fall
3 class, 3 lab hours/week

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. ESR-171/172/173 meets the science sequence 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

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. ESR-171/172/173 meets the science sequence 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

Indoor air pollution, ozone depletion, environmental economics, urban environments, waste management, environmental impact of mineral development, environmental impact analysis and planning, biological diversity, ecological succession and restoration, and environmental values. ESR-171/172/173 meets the science sequence 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.

Employee Skills Training

EST-081 Employment Skills Training Seminar

0-3 credits
Fall/ Winter/Spring/Summer
1-3 class hours/week

This course is intended to develop an individualized program of study for a student and to provide 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

This course is intended to provide the student 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. May also be 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 term
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. FR-201/202/203 meets Arts & Letters Sequence 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. FR-201/202/203 meets Arts & Letters Sequence 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. FR-201/202/203 meets Arts & Letters Sequence requirement for the AAOT degree. Prerequisite: Pass FR-202 or instructor consent.

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 volcanic landforms. Introduction to minerals, ores, and basic types of rocks. G-101/102/103 meets the science sequence 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. G-101/102/103 meets the science sequence 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. G-101/102/103 meets the science sequence 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

Explore the natural history 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-134 GPS, Maps & Compass Techniques
1 credit, Spring
3 lab hours/week

Covers GPS (Global Positioning System) use in conjunction with topographic maps for navigation, orientation, plotting routes, and measuring distances. Covers field use of the Brunton compass as a transit and for measuring dip and strike.

G-145 Geology of Pacific Northwest
3 credits, Fall
3 class hours/week

Explore the scenic geology of Northwest landscapes, historic development and current problems in environmental geology. Recognize 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. Examine 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 processes, soils, earth structure, igneous, sedimentary, metamorphic rocks, volcanic activity, and volcanic landforms. Introduction to rock forming minerals, ores, igneous, sedimentary, and metamorphic rocks. G-201/202/203 meets the science sequence 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. G-201/202/203 meets the science sequence 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. G-201/202/203 meets the science sequence 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

Introduction to programming language for computer solution of problems defined by algorithms. Prerequisite: Pass CS-120 or equivalent experience.

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. For more information call 657-6958, ext. 2416.

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**

3 credits, Fall/Winter/Spring
3 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. Any three geography classes meet the Social Science Sequence requirement for the AAOT degree. Recommended: Placement in RD-115.

GEO-110 Cultural & Human Geography

3 credits, Fall/Winter/Spring
3 class hours/week

Human population, agriculture, political patterns, language, religion, folk culture, popular culture, ethnic culture, urban landscapes, industry, and transportation. Any three geography classes meet the Social Science Sequence requirement for the AAOT degree. Recommended: Placement in RD-115.

GEO-130 Introduction to Environmental Geography

3 credits, not offered every term
3 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. Any three geography classes meet the Social Science Sequence requirement for the AAOT degree. Recommended: Placement in RD-115.

GEO-230 World Regions & Landscapes

4 credits, Fall
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. Any three geography classes meet the Social Science Sequence 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. GER-201/202/203 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. GER-201/202/203 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. GER-201/202/203 meets the Arts & Letters requirement for the AAOT degree. Prerequisite: Pass GER-202 or instructor consent.

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. GS-104/105 & GS-106 or GS-107 meets the science sequence requirement for the AAOT degree.

GS-105 Chemistry

4 credits, Fall
3 class, 3 lab hours/week

Atmospheric and environmental chemistry including acid rain, pH solutions, periodic table, atomic and molecular structure, radiant energy, combustion and other forms of energy conversion, methods of water purification. GS-104/105 & GS-106 or GS-107 meets the science sequence 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. GS-104/105/106 meets the science sequence requirement for the AAOT degree.

GS-107 Astronomy

4 credits, Fall/Winter/Spring
3 class, 3 lab hours/week

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. GS 104/105/107 meets the science sequence requirement for the AAOT degree. Also offered as an online course.

GS-109 Meteorology

4 credits, not offered every year
66 online hours/term

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-135 Navigation with GPS Technology

1 credit, not offered every term
15 class hours/5 weeks

Fundamentals of basic land navigation and position determination using traditional methods and global positioning systems (GPS). Students participate in activities using maps and GPS units.

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.

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/Disabled

1-6 credits, not offered every term
1 class hour/week

For disabled students. 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 The Clackamas Experience

1 credit, Fall/Winter/Spring/Summer
1 class hour/week

Designed for Program of Intensive English students entering the PIE program 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-110 Career Planning

2 credits
Fall/Winter/Spring/Summer
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
Fall/Winter/Spring/Summer
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

Familiarizes students with college services and personnel. Students assess study and educational time management skills and develop educational goals. Recommended for all new full-time students.

HD-140 Career Exploration

1-3 credits
Fall/Winter/Spring/Summer
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. Also offered as an online course.

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

Online course. Introduction to various decision styles for making satisfying personal, social, and work choices. Use this class for current decision needs.

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, Fall/Winter/Spring

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, Fall/Winter/Spring

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.

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, develop 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/teaching. 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 tele-course.

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-207 Stress Management/CJ

1 credit, Fall

1 class hour/week

Focuses on the effects of and ways to deal with stress, especially among emergency services workers and other high stress professionals.

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.

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.

HOR

Courses with this prefix may not transfer with credit to a four-year institution unless otherwise specified.

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.

HOR-133 Horticulture Practicum/Winter
6 credits, Winter
7 class, 4 lab hours/week

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 Plant

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

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/Spring
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-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
24 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.**

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
24 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 towards pesticide license renewal.

HOR-236 Insect Identification

2 credits, Fall
24 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 towards pesticide license renewal.

HOR-237 Disease Identification

2 credits, Winter
24 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 towards 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, Fall
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.

**Human Services/
Gerontology****HS-101 Service Learning Experience I**

1 credit, Fall/Winter/Spring
11 class, 11 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.

HS-120 Basic Caregiver Training

3 credits
Fall/Winter/Spring/Summer
2 week class/6 days

A 35-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-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 Introduction to Hospice Care

2 credits, not offered every term
2 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.

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 Service Learning Experience II/
CWE**

2-6 credits, Fall/Winter/Spring
6-18 job site hours/week

A continuation of HS-101. Recommended: Pass HS-101. 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. HST-101/102/103 meets the Social Science Sequence requirement for the AAOT degree. Also offered as a three credit 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. HST-101/102/103 meets the Social Science Sequence requirement for the AAOT degree. Also offered as a three credit 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. HST-101/102/103 meets the social science requirement for the AAOT degree. Also offered as a three credit telecourse. Recommended: Placement in RD-115.

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. HST-201/202/203 meets the social science requirement for the AAOT degree. Recommended sequence be taken in order. Also offered as a 3 credit 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. HST-201/202/203 meets the Social Science Sequence requirement for the AAOT degree. Recommended sequence be taken in order. Also offered as a 3 credit 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. HST-201/202/203 meets the Social Science Sequence requirement for the AAOT degree. Recommended sequence be taken in order. Also offered as a three credit telecourse. Recommended: Placement in RD-115.

HST-204 History of Organized Labor in the United States

3 credits, not offered every year
3 class hours/week

A course that studies the history of organized labor in the United States from the Revolutionary War to the present. HST-204/205/206 meets the social science requirement for the AAOT degree. Also offered as EC-216. Recommended: Placement in RD-115.

HST-205 American Economic History

3 credits, not offered every year
3 class hours/week

Studies the historical development of economic institutions in the United States. Includes industry, agriculture, transportation, labor and financial institutions. HST-204/205/206 meets the social science requirement for the AAOT degree. Also offered as EC-215. Recommended: Placement in RD-115.

HST-206 Modern Economic History

3 credits, not offered every year
3 class hours/week

A study of global events since the era of mercantilism affecting the economic development/underdevelopment of countries within the international community of nations. HST-204/205/206 meets the Social Science Sequence requirement for the AAOT degree. Also offered as EC-230. Recommended: Placement in RD-115.

HST-238 History of Oregon

3 credits, Fall
3 class hours/week

A survey of Oregon history from the 18th century exploration through the early period of John McLoughlin and Ft. Vancouver. Emphasis on the Lewis and Clark expedition. HST-238/239/240 meets the Social Science Sequence requirement for the AAOT degree. Recommended: Placement in RD-115.

HST-239 History of Oregon

3 credits, Winter
3 class hours/week

Oregon history from earliest days of Oregon City through the nineteenth century. Emphasis on the Oregon Trail and first territorial government. HST-238/239/240 meets the Social Science Sequence requirement for the AAOT degree. Recommended: Placement in RD-115.

HST-240 History of Oregon

3 credits, Spring
3 class hours/week

Oregon history in the 20th century, with all the developing political issues and controversies. Emphasis on Portland and the emerging national recognition. HST-238/239/240 meets the Social Science Sequence 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.

HUM**Humanities****HUM-170 Metamorphoses [C]**

5 credits, Fall
3 class, 2 TBA hours/week

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. HUM-170/171/172 fulfill the Arts & Letters Sequence requirement for the AAOT degree. They also meet 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, Winter
3 class, 2 TBA hours/week

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. HUM-170/171/172 fulfill the Arts & Letters Sequence requirement for the AAOT degree. They also meet 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, Spring
3 class, 2 TBA hours/week

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. HUM-170/171/172 fulfill the Arts & Letters Sequence requirement for the AAOT degree. They also meet the University Studies Freshman Inquiry requirement at PSU. Meets computer literacy requirement. Recommended: Placement in RD-115 & placement in WR-121.

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. Any three 200-level Humanities Inquiry courses meet the Arts & Letters Sequences 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. Any three 200-level Humanities Inquiry courses meet the Arts & Letters Sequence 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. Any three 200-level Humanities Inquiry courses meet the Arts & Letters Sequence requirement for the AAOT degree and the University Studies Sophomore Inquiry requirement at PSU. Recommended: Placement in RD-115 & placement in WR-121.

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. Any three 200-level Humanities Inquiry courses meet the Arts & Letters Sequence 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. Any three 200-level Humanities Inquiry courses meet the Arts & Letters Sequence 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. Any three 200-level Humanities Inquiry courses meet the Arts & Letters Sequence 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. Any three 200-level Humanities Inquiry courses meet the Arts & Letters Sequence 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. Any three 200-level Humanities Inquiry courses meet the Arts & Letters Sequence 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. Any three 200-level Humanities Inquiry courses meet the Arts & Letters Sequence 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. Any three 200-level Humanities Inquiry courses meet the Arts & Letters Sequence 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
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. Any three 200-level Humanities Inquiry courses meet the Arts & Letters Sequence 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
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. Any three 200-level Humanities Inquiry courses meet the Arts & Letters Sequence 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
3 class hours/week

Emphasizes composition, lighting, and weather conditions, and creative ways to illustrate a story. Weekly shooting assignments. 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. 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 computer literacy requirement. Required: Instructor consent.

J-216 Reporting [C]
3 credits
Fall/Winter/Spring/Summer
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 computer literacy requirement. Prerequisite: 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 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 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.

JPN

Japanese

JPN-101 First-Year Japanese
4 credits, Fall
4 class hours/week

Basic functional Japanese for communication in real life settings through reading, writing, speaking, and listening. Recommended: Placement in RD-115 & placement in WR-121.

JPN-102 First-Year Japanese
4 credits, Winter
4 class hours/week

Basic functional Japanese for communication in real life settings through reading, writing, speaking, and listening. Prerequisite: Pass JPN-101 or instructor consent.

JPN-103 First-Year Japanese
4 credits, Spring
4 class hours/week

Basic functional Japanese for communication in real life settings through reading, writing, speaking, and listening. Prerequisite: Pass JPN-102 or instructor consent.

JPN-201 Second-Year Japanese
4 credits, not offered every year
4 class hours/week

Expansion of basic Japanese skills with emphasis on intensive use of spoken Japanese and Kanji characters. JPN-201/202/203 meets the humanities and arts sequence requirement for the AAOT degree. Prerequisite: Pass JPN-103 or instructor consent.

JPN-202 Second-Year Japanese
4 credits, not offered every year
4 class hours/week

Expansion of basic Japanese skills with emphasis on intensive use of spoken Japanese and Kanji characters. JPN-201/202/203 meets the humanities and arts sequence requirement for the AAOT degree. Prerequisite: Pass JPN-201 or instructor consent.

JPN-203 Second-Year Japanese
4 credits, not offered every year
4 class hours/week

Expansion of basic Japanese skills with emphasis on intensive use of spoken Japanese and Kanji characters. JPN-201/202/203 meets the humanities and arts sequence requirement for the AAOT degree. Prerequisite: Pass JPN-202 or instructor consent.

MA

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

Medical Assistant

MA-110 Medical Terminology
3 credits, Fall/Winter/Spring
3 class hours/week

Understanding and using the terminology of paramedical and nursing personnel. Includes pronunciation, spelling, and meaning of words commonly used in health care professions.

MA-112 Medical Office Practice
3 credits, Fall
3 class hours/week

Fundamental information pertaining to the medical office setting. Examines medical law and bioethics, including familiarity with Medical Practice Act, legal relationships of physician and patient, and professional liabilities.

MA-115 Phlebotomy
1 credit, Spring
1 class, 1 lab hour/week

Develops basic understanding and application of blood specimen collection and handling techniques used in a general medical office and hospital laboratory. May not be challenged. Limited to medical assistant students.

MA-116 Introduction to Medications
2 credits, Winter
2 class hours/week

Medications commonly administered in physician offices. Legal aspects of medication administration are covered, along with therapeutic and adverse effects of commonly used drugs/drug classification. Limited to medical assistant students. Prerequisite or corequisite: MTH-050 or above.

MA-117 Clinical Lab Procedures I
2 credits, Winter
2 class, 1 lab hours/week

Introduces common laboratory procedures and terminology used in the general medical office. May not be challenged. Limited to medical assistant students.

MA-118 Examination Room Techniques
3 credits, Winter
2 class, 3 lab hours/week

Introduction to physician office procedures including basic examination and sterile setups plus EKG, care of equipment, requesting of supplies, cleaning, disinfecting, and sterilizing. May not be challenged. Limited to medical assistant students who have completed fall term requirements. Prerequisites: 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 assignment in a physician's office or clinic to gain practical experience. May not be challenged. Limited 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 assignment to a physician's office or clinic to gain practice experience. May not be challenged. Limited 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
1 class, 2 lab hours/week

Continuation of common laboratory procedures used in medical offices. May not be challenged. Limited to medical assistant students. Prerequisite: Pass MA-117.

MA-125 Fundamentals of Human Development
3 credits, Spring
3 class hours/week

Individual development from conception to death, both physical and emotional, will be presented in this class. Limited to students admitted to the medical assistant program only.

MFG

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

Manufacturing Technology

The Manufacturing Department has a variety of programs and classes that are arranged here by course number and are not grouped according to program. 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-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: MFG-050.

MFG-050 Semiconductor Operator II
10 credits, not offered every term
20 class hours/week

A continuation of MFG-049. Corequisite: MFG-049.

MFG-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.

MFG-104 Print Reading

2 credits, Fall/Winter/Spring
2 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
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. Recommended: CDT-111.

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. Recommended: MFG-111, MFG-112, MFG-113, MFG-201 or 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. The selection and use of taps and drills along with internal and external threading, and simple step milling will be discussed. 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 and the selection of abrasive grinding wheels will also be discussed. 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 and indexing devices. Also covers applied technical math, inspection techniques, optical comparators, coordinate measuring machine, and cylindrical grinder. Recommended: MFG-111 & MFG-112.

MFG-120 New Student College Success

1 credit, Fall
1 class hour/week

Course designed to introduce students to each other and skills needed to achieve college success. Recommended for all new students in the Manufacturing field.

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. Deming's management philosophy with problem solving and charting techniques. Covers \bar{x} , R and C charts, and capability analysis.

MFG-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: MFG-137 & MTH-065.

MFG-129 Basic Vacuum Technology

2 credits, Winter
2 class hours/week

Focuses on elementary theory and practice of high vacuum equipment for microelectronics processing. Students study how to set up, operate, debug and monitor complete vacuum systems. Recommended: MFG-145. Prerequisite: MFG-135.

MFG-130 Basic Electricity I

3 credits, Fall
3 class hours/week

For students who have little or no training in electricity. Concepts presented from theoretical and practical viewpoint using examples common to the trade. Circuits, atomic structure, electron theory, parallel and combination direct current is discussed. Recommended: MTH-060.

MFG-131 Basic Electricity II

3 credits, Winter
3 class hours/week

Alternating circuits, single and three phase circuits, and basic load calculations are discussed. Transformers, relays, solenoids, and motors are discussed. Lighting circuits containing both incandescent and electric discharge lighting are also discussed. Recommended: MTH-060 & MFG-130.

MFG-132 Basic Electricity III

3 credits, Spring
3 class hours/week

Course designed to gain knowledge of the National Electric Code (NEC) or Oregon Electrical Specialty Code as they apply to the scope of the Limited Building Maintenance Electrical License. Recommended: MFG-130 & MFG-131.

MFG-134 Principles & Applications of Manufacturing Equipment Technology I

4 credits, Spring
8 class hours/week

First in a series emphasizing applied electromechanical principles. Covers theory, operation and application of force, work, rate, resistance, energy power and force transformers. Also covers diagnosis, service maintenance and repair of systems. Recommended: MFG-107, MFG-137.

MFG-135 Semiconductor Processing Overview

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 final assembly and test of a completed device.

MFG-136 Photolithography Overview

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: MFG-135.

MFG-137 Basic Electronics I

3 credits, Fall
6 class hours/week

Introduction to basic concepts of voltage, current, and resistance and their relationships in DC circuits. Analysis of series, parallel and series-parallel circuits will be made using Ohms & Kirchloffs laws and Norton & Thevenin theorems. Corequisite: MTH-050 or MTH-060 if students are continuing with electronics technology coursework.

MFG-138 Silicon Materials Fabrication

2 credits, Winter
2 class hours/week

Provides an overview of basic processes involved in the fabrication of finished silicon wafers. Focuses on the Czochralski method. One module is devoted to epitaxial deposition. Recommended: MFG-135.

MFG-139 Principles of Troubleshooting I

2 credits, Winter
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.

MFG-140 Principles of Fluid Power

3 credits, Winter
6 class hours/week

Hydraulic and pneumatic technology as used in industry today. Principles of hydraulics, and basic components including valves, cylinders, pumps, motors, piping, fluid, fluid conditions and accessories are covered.

MFG-142 Basic Electronics II

3 credits, Winter
6 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: MFG-137.

MFG-145 Microcontamination & Particle Control

3 credits, Spring
3 class hours/week

Provides an overview of theoretical and practical aspects of chemical and particle contamination and particle troubleshooting in semiconductor fabrications. The interaction of the theoretical and practical aspects of chemical and particle contamination are emphasized. Prerequisite: MFG-135.

MFG-146 Semiconductor Materials

4 credits, Spring
4 class hours/week

Overview of the basic elements of semiconductor materials technology. Metals, crystals and amorphous solids are studied. Units, measurements, composition and properties of films used in semiconductor manufacturing are studied. Introduces practical metallurgy, industrial plastics and composites. Recommended: MFG-154, MFG-155. Prerequisite: MFG-135.

MFG-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, terms and definitions and inspection and testing.

MFG-151 GMAW/FCAW Welding (Wirefeed)

4 credits, Winter
8 class hours/week

Fillet and groove welds in all positions with solid and flux core wire. Includes: safety, electrical fundamentals, routine maintenance, minor repair, terms and definitions, testing and inspection. Recommended: MFG-150.

MFG-152 SMAW Welding (Stick)

4 credits, Fall
8 class hours/week

Perform fillet and groove welds in all positions with a variety of different electrodes. Includes: safety, electrical fundamentals, routine maintenance, minor repair, terms and definitions, testing and inspection. Recommended: MFG-150.

MFG-153 Welders' Blueprint Reading

2 credits, Fall
4 class hours/week

Instruction in reading and interpreting sketches and prints common in welding practice, conventional drafting symbols and specialized welding symbols. Covers drawing views and projections, ISO and AWS symbols.

MFG 154 Semiconductor Physics

2 credits, Fall
4 class hours/week

General Physics curriculum: units and vectors, kinematics, forces, Newton's laws of motion, circular motion, work and energy, impulse and rotational motion. Also includes overview of the basic elements of classical physics used in semiconductor manufacturing. Prerequisite: MTH-080.

MFG-155 Semiconductor Chemistry

2 credits, Fall

4 class hours/week

Provides an overview of atomic structure and the periodic table with emphasis on semiconductors: ionic, metallic and covalent bonding, solids, liquids, gases and solutions, electron-transfer and acid-based reactions. Prerequisite: MTH-080.

MFG-156 Oxidation and Deposition**Overview**

2 credits, Fall

2 class hours/week

Provides the fundamentals of current processes used in oxidation and deposition. Also provides an introductory overview of hardware and processes related to furnaces in semiconductor manufacturing. Prerequisites: MFG-135 Recommended: MFG-145, MFG-154, MFG-155.

MFG-157 Digital Logic I

3 credits, Fall

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. Corequisite: MTH-050 or MTH-060 if students are continuing with electronics technology coursework. Recommended: MFG-137.

MFG-160 GTAW Welding (TIG)

4 credits, Spring

8 class hours/week

Instruction in theory and applications of the GTAW process. Includes: safety, electrical fundamentals, machine set up and adjustment, minor repairs, and welding on mild steel, aluminum, and stainless steel. Recommended: MFG-150.

MFG-192 Digital Logic II

4 credits, Winter

8 class hours/week

Bus systems and computer peripherals and systems using latches, registers, counters, memory circuits are developed and analyzed. Prerequisite: MFG-157.

MFG-195 Wet/Dry Etch and Ion Implantation

4 credits, Spring

4 class hours/week

Course provides the essential process and equipment issues related to the etching and ion implantation processes. Troubleshooting of common equipment and process related problems are emphasized. Prerequisite: MFG-135. Recommended: MFG-145, MFG-146, MFG-154, MFG-155.

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 Programming I

4 credits, Fall/Winter

7.5 class hours/week

Class for persons with little or no previous experience. Students will be taught how to operate a CNC machining center and to write a G&M-code program. Recommended: MFG-109 & MFG-112.

MFG-202 CNC Programming II

4 credits, Winter

7.5 class hours/week

Second course in the CNC programming series. Includes sub-programs and 4th axis programming for the milling center and the basics of programming and operation of CNC turning center. Recommended: MFG-201.

MFG-203 CNC Programming III-Electrical Discharge Machining

3 credits, Spring

6 class hours/week

Introduces the principles and operation of Electrical Discharge Machining (EDM). Operating principles, dielectric fluids, electrode wear, power setting and surface finish control will be discussed. Includes hands-on training on a Hansvedt, sinker-type EDM. Recommended: MFG-201 & 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 the Computer-Aided Manufacturing series. Topics include industrial controls and automation, robotics and motion control. Students will refine their knowledge of Computer-Aided Manufacturing through hands-on laboratory activities. 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 Advanced Computer Skills for Manufacturing [C]

3 credits, not offered every term

3.5 class hours/week

Designed to meet the higher-level computer literacy needs of the manufacturing technologist. Includes structured programming using Visual Basic, spreadsheets and databases. Course assumes a basic knowledge of the PC, Internet, and file management. May be taken in lieu of MFG-109 or CDT-104. Meets computer literacy requirement.

MFG-210 CAM Special Projects

1-4 credits, Fall/Winter/Spring

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-214 Manufacturing Project Management & Decision Making

2 credits, not offered every term
3 class hours/week
Provides a practical, hands-on approach to project management in a manufacturing environment. Participants will be introduced to project planning, organization, and a variety of project control models using TQM and SPC.

MFG-220 Principles & Applications of Manufacturing Equipment Technology II

3 credits, Spring
6 class hours/week

Second in a series emphasizing applied electromechanical principles. Covers momentum, waves and vibrations, energy converters, transducers, radiation, light and optical systems, and time constants. Also covers the diagnosis, service maintenance and repair of systems. Prerequisite: MFG-134.

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-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: MFG-127.

MFG-230 CNC Press Brake

2 credits, not offered every term
4 class hours/week

Includes an overview of press brake design and capabilities, operation of CNC control, and CNC forming techniques. Also includes hands-on forming.

MFG-232 Flat Pattern Development

4 credits, not offered every term
4 class hours/week

Sheet metal blank size computations derived from an understanding of metals displacement based on radii, thickness and angles. Familiarizes technicians with formulas for bend deductions, bend allowance, notches, joggles, hems, and reliefs.

MFG-234 CNC Laser

2 credits, not offered every term
4 class hours/week

This hands-on course is designed to take a student through the theory of operation, basic programming, set-up procedures, and operation of CNC lasers.

MFG-236 CNC Punching

2 credits, not offered every term
4 class hours/week

Hands-on class examines basic programming, set-up procedures, and operation of CNC punches.

MFG-238 CNC Programming, G-Code

4 credits, not offered every term
4 class hours/week

Introduction to basic CNC programming techniques. Students will use ISO "G" code programming conventions as they apply to CNC mills and lathes.

MFG-239 Principles of Troubleshooting II

3 credits, Winter
3 class hours/week

Covers advanced applications of diagnosis, service maintenance and repair of systems, including Total Predictive Maintenance, applied statistical process control, and radio frequency. Prerequisite: MFG-139.

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 CMMs as they apply to industry to verify quality.

MFG-242 Programming for CMM Operators

2 credits, not offered every term
4 class hours/week

Introduction to programming a Brown & Sharpe CMM. Focuses on efficiency of measurement procedures and the Micro Measure III software. Also covers alignment for datum dimensioning of part features. Recommended: MFG-240.

MFG-246 CNC Machine: Set-up & Operate

1 credit, not offered every term
3 class hours/week

Designed to instruct new CNC operators or the transitional manual machinist in the disciplines of CNC machine operation and set-up as it relates to a 3-axis vertical mill.

MFG-250 Linear Circuits

3 credits, Fall
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. Recommended: MTH-060. Prerequisite: MFG-127 or instructor consent.

MFG-252 Control Systems

3 credits, Winter, alternate years
6 class hours/week

Covers basic control system and subsystems used in the electronics industry including programmable controllers, sensors, transducers, motion and motor control systems. Students work to the component level and solder to IPC 601A standards. Prerequisite: MFG-157, MFG-250.

MFG-254 Micro Computer Projects

4 credits, Spring, alternate years
8 class hours/week

Introduces participants to processor architecture, assembly language & structured programming, I/O interface and system level integration on industry standard devices. Students work to the component level and solder to the IPC 610A standards. Prerequisite: MFG-157, MFG-192, MFG-239.

**MFG-260a AWS Welder Certification,
1 Plate**

0 credit

Fall/Winter/Spring/Summer
3 class hours/term

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.

**MFG-260b AWS Welder Certification,
2 Plates or Pipe**

0 credit

Fall/Winter/Spring/Summer
3 class hours/term

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.

MFG-261 Welding Special Projects

1-11 credits

Fall/Winter/Spring/Summer

20 class hours/week

Allows students to improve their welding skills while working on instructor-approved projects or in preparation for taking their AWS certification test. May be repeated. Required: prior welding experience.

MFG-262 Welding Fabrication

2 credits, Winter

4 class hours/week

Covers fabrication techniques such as blueprint reading, layout, sketching, bills of material, job cost calculations, measuring, fitting, welding and cutting. Required: prior welding experience.

**MFG-263 Welders Certification
Preparation**

2 credits, Spring

4 class hours/week

Prepares students for welding certification tests. Instruction given in preparation of test plates, welding techniques, visual acceptance criteria, destructive and non-destructive testing procedures used for certification. Meets requirements of AWS Entry Level Welders Program. Required: prior welding experience.

**MFG-265 SMAW Welding (Stick), AWS
Entry Level Welder Prep.**

8 credits, Fall

16 class hours/week

Meets SMAW requirements of the AWS Entry Level Welder Program. Includes: shop safety, electrical fundamentals, electrode selection, equipment set up, minor repair, and performing fillet and groove welds in all positions.

**MFG-266 GMAW/FCAW Welding
(Wirefeed), AWS Entry Level Welder
Prep.**

8 credits, Winter

16 class hours/week

Meets GMAW/FCAW requirements of AWS Entry Level Welder Program. Includes: shop safety, filler material transfer methods, electrode selection, equipment set up, and performing fillet and groove welds in all positions.

**MFG-267 GTAW (TIG), AWS Entry Level
Welder Prep**

8 credits, Spring

16 class hours/week

Meets GTAW requirements of AWS Entry Level Welder Program. Includes: shop safety, electrode selection, equipment set up, and performing fillet and groove welds on mild steel, stainless steel, and aluminum in various positions.

MFG-271 MasterCam Mill I

4 credits, Fall/Winter/Spring

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, Fall/Winter/Spring

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.

MIT***Medical Imaging
Technology*****MIT-103 Introduction to Medical
Imaging**

3 credits, Fall/Winter/Spring

33 online hours/term

Distance Learning: Online. Introduces the art and science of medical imaging. History and development of radiography, vascular technology, diagnostic medical sonography, nuclear medicine; ethics; medical law; the health care industry, and the related professional and regulatory organizations. Recommended: Placement in WR-101 or WR-121.

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.

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.

MTH-060 Algebra I

4 credits

Fall/Winter/Spring/Summer

4 class hours/week

Algebra fundamentals for review or for the beginner. Topics include operations on integers, first degree equations and inequalities, operations on algebraic expressions, and an introduction to graphing techniques. Also offered as an online course. Prerequisite: Pass MTH-020.

MTH-065 Algebra II

4 credits

Fall/Winter/Spring/Summer

4 class hours/week

Factoring techniques, operations and equations involving rational expressions, introduction to radicals, solving quadratic equations. Also offered as an online course. Prerequisite: Pass MTH-060.

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.

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.

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 & pass WR-090 (formerly WR-011).

MTH-095 Algebra III

4 credits

Fall/Winter/Spring/Summer

4 class hours/week

Uses a graphing utility to study topics that include quadratic equations and inequalities; relations and functions including graphing linear equations and inequalities in two variables; quadratic equations in two variables; exponents and radicals; conic sections. Also offered as an online course. Prerequisite: Pass MTH-065.

MTH-105 Introduction to Contemporary Math

4 credits, Fall/Winter/Spring

4 class hours/week

Transfer mathematics course for nonscience majors. Includes the study of sets, problem solving, counting techniques, probability, introduction to statistics and fractals. Recommended: Placement in RD-115 & placement in WR-121. Prerequisite: Pass MTH-095.

MTH-111 College Algebra

4 credits

Fall/Winter/Spring/Summer

4 class hours/week

A transfer course designed for students preparing for trigonometry or statistics. Topics include relations and functions, theory of equations, rational functions, exponential and logarithmic functions, an introduction to matrices, and matrix solutions to linear systems, sequences and series. Also offered as an online course. Recommended: Placement in RD-115 & placement in WR-121. Prerequisite: Pass MTH-095.

MTH-112 Trigonometry/Pre-Calculus

4 credits

Fall/Winter/Spring/Summer

4 class hours/week

Trigonometry developed using the unit circle. Topics include trigonometric functions and their inverses, graphs of trigonometric functions, equations and identities, applications, an introduction to vectors, polar graphs, complex numbers, and conic sections. Recommended: Placement in RD-115 & placement in WR-121. Prerequisite: Pass MTH-111.

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.

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.

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.

MTH-231 Elements of Discrete Math

4 credits, not offered every term

4 class hours/week

A transfer course designed for computer science, electrical engineering, and mathematics majors. Topics include logic, relations, digraphs, lattices, Boolean algebras, and circuit simplification. Recommended: Placement in RD-115 & placement in WR-121. Prerequisite: Pass MTH-111.

MTH-232 Discrete Mathematics II

4 credits, not offered every term

4 class hours/week

More advanced topics designed for computer science majors. Topics include trees, groups, languages, finite-state machines, and coding. Recommended: Placement in RD-115 & placement in WR-121. Prerequisite: Pass MTH-231.

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.

MTH-244 Statistics

4 credits, 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.

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.

MTH-252 Calculus II

5 credits, Fall/Winter/Spring

5 class hours/week

Topics and applications of integration. Recommended: Placement in RD-115 & placement in WR-121. Prerequisite: Pass MTH-251.

MTH-253 Calculus III

5 credits, Winter/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.

MTH-254 Vector Calculus

5 credits, Fall/Spring

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.

MTH-256 Differential Equations

4 credits, Spring

4 class hours/week

Introduction to the basic concepts, theory, methods, and applications of ordinary differential equations. Numerical solutions and Laplace transforms will be presented. Recommended: Placement in RD-115 & placement in WR-121. Corequisite: MTH-253.

MTH-261 Linear Algebra

4 credits, Winter

4 class hours/week

Systems of equations, vectors, matrices, linear transformations, eigenvalues and eigenvectors, and applications of these topics. Recommended: Placement in RD-115 & placement in WR-121. Prerequisite: Pass MTH-252.

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.

MUP-102 Concert Band

1 credit, Fall/Winter/Spring

1-2 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, additional credit, and affiliation with the Lewis & Clark Band or Marylhurst Orchestra available by special arrangement. 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.

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.

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.

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. 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.

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.

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.

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.

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. 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.

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. 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. 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. 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. 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.

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. 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.

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. 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.

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. 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. 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.

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. 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.

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.

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.

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.

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. 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.

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. 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. 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. 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.

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. Corequisite: MUS-189.

MUP-202 Concert Band
1-2 credits, Fall/Winter/Spring
2-4 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, additional credit, and affiliation with the Marylhurst Orchestra available by special arrangement. 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.

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.

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.

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.

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.

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.

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. Highly recommended for music majors.

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. 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.

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. 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.

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. 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. 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. 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. 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. 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.

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. 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.

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. 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. 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.

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. 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.

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. 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. 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.

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. 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.

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. 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. 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. 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.

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.

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 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.

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 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.

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 computer literacy requirement.

MUS-105 Music Appreciation [C]

3 credits

Fall/Winter/Spring/Summer

33 online hours/term

Distance Learning: Online. 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 computer literacy requirement.

MUS-107 Introduction to Audio Recording I

0-1 credits, Fall/Winter/Spring

2 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.

MUS-108 Introduction to Audio Recording II

0-1 credits, Fall/Winter/Spring

2 class hours/week

Exploration of 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. Analog, digital, and hard drive recording will be explored. Prerequisite: Pass MUS-107.

MUS-110 Introduction to Music Theory

3 credits, Fall

3 class hours/week

Builds familiarity with notes in treble and bass clef. Teaches visual and auditory recognition of rhythmic and pitch patterns. Includes scales, intervals, triads, and cadences. Requires fundamental music reading skill.

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. MUS-111/112/113 meets Arts & Letters Sequence 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 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. MUS-111/112/113 meets Arts & Letters Sequence 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. 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. MUS-111/112/113 meets Arts & Letters Sequence 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. 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. 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. 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 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 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 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 approached and integration of electronic instruments. 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. 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. 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. 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
1 class hour/week

Explores the relationship of music to economic, political, cultural, and artistic subjects. Examines how music serves and is served by pop culture and media.

MUS-131 Piano for Pleasure

1 credit, Fall
2 class hours/week

Beginning classroom piano instruction for non-music majors. Includes improvisation, playing by ear, and chordal accompaniment for melodies.

MUS-132 Piano for Pleasure

1 credit, Winter
2 class hours/week

Beginning classroom piano instruction for non-music majors. Includes improvisation, playing by ear, and chordal accompaniment for melodies.

MUS-133 Piano for Pleasure

1 credit, Spring
2 class hours/week

Beginning classroom piano instruction for non-music majors. Includes improvisation, playing by ear, and chordal accompaniment for melodies.

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.

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.

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.

MUS-137 Group Guitar

1 credit, Fall
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.

MUS-138 Group Guitar

1 credit, Winter
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.

MUS-139 Group Guitar

1 credit, 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.

MUS-140 Careers in Music

3 credits, Winter
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.

MUS-143 MIDI Sequencing [C]

2 credits, not offered every term
2 class hours/week

MIDI sequencing using Vision and Musicshop software in the Macintosh lab. Techniques can be transferred to any computer environment. Meets computer literacy requirement. Required: Instructor consent.

MUS-189 Performance & Repertoire

1 credit, Fall/Winter/Spring
1 class hour/alternate weeks

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.

MUS-201 Music Literature: Greek-Renaissance

3 credits, not offered every year
3 class hours/week

For nonmajors. Emphasis on cultivating understanding of music through study of elements, forms, and historical styles. MUS-201, MUS-202, MUS-203, MUS-204, MUS-205, & MUS-206, any three, meet the Arts & Letters Sequence requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

MUS-202 Music Literature: Baroque-Classical

3 credits, Fall
3 class hours/week

For nonmajors. Emphasis on cultivating understanding of music through study of elements, forms, and historical styles. MUS-201, MUS-202, MUS-203, MUS-204, MUS-205 & MUS-206, any three, meet the Arts & Letters Sequence requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

MUS-203 Music Literature: Romantic-the 20th Century

3 credits, not offered every year
3 class hours/week

For nonmajors. Emphasis on cultivating understanding of music through study of elements, forms, and historical styles. MUS-201, MUS-202, MUS-203, MUS-204, MUS-205 & MUS-206, any three, meet the Arts & Letters Sequence requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

MUS-204 Music Literature: American Folk Music

3 credits, not offered every year
3 class hours/week

For nonmajors. Emphasis on cultivating understanding of music through study of elements, forms, and historical styles. MUS-201, MUS-202, MUS-203, MUS-204, MUS-205 & MUS-206, any three, meet the Arts & Letters Sequence requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

MUS-205 Music Literature:

History of Jazz
3 credits, Winter
3 class hours/week

For nonmajors. Emphasis on cultivating understanding of music through a study of elements, forms, and historical styles. MUS-201, MUS-202, MUS-203, MUS-204, MUS-205 & MUS-206, any three, meet the Arts & Letters Sequence requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

MUS-206 Music Literature: History of Rock

3 credits, Spring
3 class hours/week

For nonmajors. Emphasis on cultivating understanding of music through study of elements, forms, and historical styles. MUS-201, MUS-202, MUS-203, MUS-204, MUS-205 & MUS-206, any three, meet the Arts & Letters Sequence 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. 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. 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 III

3 credits, Winter
3 class hours/week

Advanced study of the chromatic material and structure of tonal music. 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. 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. 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. 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. 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. 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. 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. 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. 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. Required for second-year music majors. Corequisites: MUS-213, MUS-213L & MUS-216. Prerequisite: Pass MUS-225.

MUS-280 Recording Studio/CWE

2-6 credits
Fall/Winter/Spring/Summer
1.5 class, 6-18 job site hours/week

Cooperative work experience. Overview of recording studio production and management via placement in a working recording studio as an observer/intern. This experience can include work both in the studio and alongside freelance sound engineers who work in a variety of situations. Required: Instructor consent & a CWE seminar. Prerequisites: Pass MUS-107 & pass MUS-108.

MUS-280 Sound Technician/CWE

2-6 credits
Fall/Winter/Spring/Summer
1.5 class, 6-18 job site hours/week

Cooperative work experience. Overview of live sound engineering, production, and management via placement in a working live performance venue as an observer/intern. This experience can include work both in the venue and alongside freelance live sound engineers. Required: Instructor consent & a CWE seminar. Prerequisites: Pass MUS-107 & pass MUS-108.

MUS-280 Music Retail/CWE

2-6 credits
Fall/Winter/Spring/Summer

1.5 class, 6-18 job site hours/week
Cooperative work experience. Overview of the music retail occupation via placement in a working music retail situation as an observer/intern. This experience can include a variety of settings. Required: Instructor consent & a CWE seminar.

MUS-280 Music Librarianship/CWE

2-6 credits
Fall/Winter/Spring/Summer

1.5 class, 6-18 job site hours/week
Cooperative work experience. Overview of the field of music librarianship via placement in a working situation as an observer/intern. Includes work in existing music libraries alongside professional music librarians who work in a variety of situations. Required: Instructor consent & a CWE seminar.

MUS-280 Music Engraving/CWE

2-6 credits
Fall/Winter/Spring/Summer

1.5 class, 6-18 job site hours/week
Cooperative work experience. Overview of the field of music engraving and copying via placement in a working situation as an observer/intern. Includes work alongside professional music copyists who work in a variety of situations. Required: Instructor consent & a CWE seminar.

MUS-280 Music Therapy/CWE

2-6 credits
Fall/Winter/Spring/Summer

1.5 class, 6-18 job site hours/week
Cooperative work experience. Overview of the field of music therapy via placement in a working situation in an observer/intern capacity. Includes work alongside professional music therapists who work in a variety of situations. Required: Instructor consent & a CWE seminar.

NUR**Nursing****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. Prerequisites: Pass BI-234 with a "C" or better & computer literacy requirement.

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 the perioperative client, clients with cultural, language and sensory barriers, and clients with respiratory, cardiovascular problems, HIV/AIDS and other immunologic disorders. Teaching and learning principles are addressed. May not be challenged. Limited to admitted nursing students. Prerequisites: Pass BI-231, pass NUR-101, pass NUR-112 & 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 clients with endocrine disorders, gastrointestinal and genitourinary problems, and cancer is addressed. May not be challenged. Limited to admitted nursing students. Prerequisites: Pass BI-232, 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 Communication: Methods & Applications

2 credits, Fall
2 class hours/week

Introduction to basic and professional communication techniques and skills. Emphasis on nurse-client and nurse-professional communication, both written and verbal. Group process skills are introduced. Limited to admitted nursing students.

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. Corequisite: NUR-212.

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/week

Theoretical and practical application related to the care of clients with psychiatric and neurological disorders; disorders of the blood and blood forming organs; and clients with peripheral vascular disorders. May not be challenged. Limited to admitted nursing students. Prerequisites: Pass NUR-201 & pass NUR-212, both with a "C" or better. Corequisite: NUR-215.

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 requiring high activity nursing interventions. Focuses on critical thinking, decision making, and client care management. May not be challenged. Limited to admitted nursing students. Prerequisites: Pass NUR-202 & pass NUR-215, both with a "C" or better.

NUR-203C Nursing VI Clinical

6 credits, Spring
18 clinical/lab hours/week

Clinical application of previous and current program content.

NUR-212 Professional Interpersonal Communication

2 credits, Fall
2 class hours/week

Emphasizes leadership skills in group process, problem solving with clients and health team members in the current health care environment. Applications to manage conflict, change, loss, grief, death, and crisis are introduced. Limited to admitted nursing students.

NUR-215 Trends & Issues

1 credit, Winter
2 class hours/week

Focuses on current trends and issues in nursing and health care. Professional responsibilities and career management are also addressed.

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-218 Neonatal Resuscitation

1 credit, Fall
20 class hours/term

Gain knowledge and skills needed to perform neonatal resuscitation. Includes how to use resuscitation equipment, manikins, and presents simulated situations for practice. Prerequisite: Pass NUR-103 with a "C" or better. Corequisite: NUR-201.

NUR-240 Nursing Care of Children with Special Needs

1 credit, Spring
32 clinical hours

Care of the child who is medically fragile or has special needs. Assessment of physical status, growth and development, tube feeding, seizure disorders, and care planning. One hour of seminar per shift for sharing and analysis of interactions, responses, and assessments. Open to Level I & II students in the Nursing program. Prerequisite: Pass NUR-102, with a "C" or better. Corequisite: NUR-103 or NUR-203

NUR-288 Physical Assessment

3 credits, Spring
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. Limited to registered nurses and nursing students.

OS

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

Study Skills

See also English as a Second Language (ESL), Reading (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 (formerly RD-012) or pass RD-080 (formerly RD-010).

OST

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

Occupational Skills Training**OST-180 Occupational Skills Training Program**

2-15 credits

Fall/Winter/Spring/Summer

1.5 class + 6-40 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, Winter/Spring

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

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. PH 121/122/123 meets the science sequence requirement for the AAOT degree. Recommend: Placement in RD-115, WR-121; 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. PH 121/122/123 meets the science sequence requirement for the AAOT degree. Recommend: Placement in RD-115, WR-121; MTH-105 or MTH-111.

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. PH 121/122/123 meets the science sequence requirement for the AAOT degree. Recommend: Placement in RD-115, WR-121; MTH-105 or MTH-111.

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. PH-201/202/203 meets the science sequence 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. PH-201/202/203 meets the science sequence 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, optical instruments, particles and waves, special relativity. PH-201/202/203 meets the science sequence requirement for the AAOT degree. Prerequisite: Pass PH-202.

PH-211 General Physics With Calculus

5 credits, Fall
4 class, 3 lab hours/week

Vector mathematics, kinematics, Newton's Laws of Motion, work and energy, impulse and momentum, rotational motion. PH-211/212/213 meets the science sequence requirement for the AAOT degree. Prerequisite: Pass MTH-251.

PH-212 General Physics With Calculus

5 credits, Winter
4 class, 3 lab hours/week

Elasticity and equilibrium, periodic motion, temperature and heat, first law of thermodynamics, mechanical waves and interference, electric forces and fields, Gauss' law. PH-211/212/213 meets the science sequence 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, AC circuits, properties of light, geometric optics, special relativity. PH-211/212/213 meets the science sequence 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**

3 credits
Fall/Winter/Spring/Summer
3 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. Any three philosophy courses meet the Arts & Letters Sequence requirement for the AAOT degree. Also offered as a tele-course. Recommended: Placement in RD-115.

PHL-102 Ethics

3 credits, Fall/Winter/Spring
3 class hours/week

Introduces the study of morality: e.g., right and wrong, free will and determinism, morals and society. Any three philosophy courses meet the Arts & Letters Sequence requirement for the AAOT degree. Recommended: Placement in RD-115.

PHL-103 Critical Reasoning

3 credits, Fall/Winter/Spring
3 class hours/week

Focuses on improving reasoning and critical assessment ability. Emphasizes practical methods, involves study of editorials, essays, propaganda, and advertisements. Any three philosophy courses meet the Arts & Letters Sequence requirement for the AAOT degree. Recommended: Placement in RD-115.

PHL-205 Moral Issues

3 credits, not offered every term
3 class hours/week

Philosophical examination of selected moral issues such as the environment, biomedical ethics, human experimentation, professional ethics, privacy, and war. Any three philosophy courses meet the Arts & Letters Sequence requirement for AAOT degree. Recommended: Placement in RD-115.

PHL-210 Philosophy of Religion

3 credits, not offered every term
3 class hours/week

Introduces philosophic basis of religious thought in world culture. Explores different points of view. Any three philosophy courses meet the Arts & Letters Sequence requirement for the AAOT degree. Recommended: Placement in RD-115.

PHL-213 Asian Philosophy
3 credits, Winter/Spring/Summer
3 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. Any three philosophy courses meet the Arts & Letters Sequence requirement for the AAOT degree. Recommended: Placement in RD-115.

PHL-215 History of Western Philosophy
3 credits, not offered every term
3 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. Any three philosophy courses meet the Arts & Letters Sequence requirement for the AAOT degree. Recommended: Placement in RD-115.

PIE

Courses with this prefix may 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-028 Intermediate Read/Write for Daily Life
3 credits, not offered every term
3 class hours/week

Designed to improve reading and writing skills at the intermediate level as needed for the workplace and everyday life. Includes letters, applications, forms, directions, reports, and other texts encountered in daily life. Course content provided by the textbook and real life materials. Required: Instructor consent.

PIE-033 Intermediate Conversation
3 credits
Fall/Winter/Spring/Summer
3 class hours/week

Designed for intermediate non-native speakers of English to gain fluency in speaking and listening in functional contexts. Required: Instructor consent.

PIE-034 Upper Intermediate Conversation
3 credit, not offered every term
3 class hours/week

Designed for upper intermediate non-native speakers of English to gain fluency in speaking and listening in the following areas: expressing opinions, gathering and recording information, giving prepared presentations, and participating in group discussions. Required: Instructor consent.

PIE-040 Beginning Grammar
0 credit, not offered every term
3 class hours/week

Designed for beginning non-native speakers of English to gain grammatical accuracy; use of the verb "to be", simple present verb tense, nouns, descriptive/possessive adjectives, simple sentence structures in oral/written communication used for everyday living. Required: Instructor consent.

PIE-041 Upper Beginning Grammar
0 credit
Fall/Winter/Spring/Summer
3 class hours/week

Designed for upper beginning level non-native speakers of English to gain grammatical accuracy in the use of verb tenses, modals, adverbs of frequency, and comparative adjectives in oral and written communication. Required: Instructor consent.

PIE-043 Intermediate Grammar
3 credits
Fall/Winter/Spring/Summer
3 class hours/week

Designed for intermediate level non-native speakers of English to gain grammatical accuracy in the use of verb tense and modals and related forms in oral and written communication. Required: Instructor consent. Corequisite: ESL-070.

PIE-044 Upper Intermediate Grammar
3 credits
Fall/Winter/Spring/Summer
3 class hours/week

Designed for the upper intermediate non-native speaker of English to help consolidate and refine accuracy of verb tenses and gain knowledge of verb forms, voice, gerunds, infinitives, and relative clauses. Required: Instructor consent. Corequisite: ESL-070.

PIE-050 Beginning Reading/Writing
0 credit
Fall/Winter/Spring/Summer
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/Writing
0 credit
Fall/Winter/Spring/Summer
3 class hours/week

Designed for the upper beginning level student who reads and writes at the sentence level. Read short texts and write groups of related sentences in paragraph form. Required: Instructor consent.

PIE-053 Intermediate Reading/Writing
6 credits
Fall/Winter/Spring/Summer
3 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 creditsFall/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-060 Pronunciation
3 credits, not offered every term
3 class, 1 lab 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
3 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-072 Reading/Writing Workshop
3 credits, not offered every term
3 class hours/week

Designed for the low intermediate to upper intermediate level ESL student to improve reading and writing skills as needed for more advanced ESL and college courses, in the workplace, and in everyday life. Writing focus is on paragraph level writing. Required: Instructor consent.

PIE-080 Intermediate Reading Skills
3 credits, not offered every term
3 class hours/week

Designed for non-native speakers to develop the reading skills needed to succeed in college and in everyday life. Required: Instructor consent.

PIE-081 Upper Intermediate Reading Skills
3 credits, Winter
3 class hours/week

Designed for non-native speakers to develop reading skills needed to succeed in college and in everyday life. Required: Instructor consent.

PIE-084 Spelling/Vocabulary Building
0 credit, Fall
3 class hours/week

Designed to extend upper intermediate to advanced level students' vocabulary range and strengthen spelling ability. Required: Instructor consent.

PIE-085 TOEFL Preparation
0 credit, not offered every term
1 class, 2 lab hours/week

Designed for advanced level PIE students to prepare for the Test of English as a Foreign Language (TOEFL) examination by improving language skills and familiarizing them with the test, test-taking techniques, strategies and computer skills. Required: Instructor consent.

PIE-086 Wordprocessing/Email/Internet
0 credit, not offered every term
2 class, 1 lab hours/week

Basic introduction to wordprocessing, email, and the Internet for students of intermediate level and above. Use computer tools to improve English proficiency for success in academic, workplace and daily life. Required: Instructor consent.

PIE-088 Bridge to College
3 credits, Spring
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**
3 credits, Fall

3 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. Any three political science courses meet the Social Science Sequence requirement for the AAOT degree. Recommended: Placement in RD-115.

PS-202 US Government: National Government Institutions
3 credits, Winter

3 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. Any three political science courses meet the Social Science Sequence requirement for the AAOT degree. Recommended: Placement in RD-115.

PS-203 US Government: State/Local Institutions
3 credits, Spring

3 class hours/week

Introduction to American state and local government, with emphasis on Oregon political behavior in states and communities. Any three political science courses meet the Social Science Sequence requirement for the AAOT degree. Recommended: Placement in RD-115.

PS-204 Introduction to Comparative Politics
3 credits, Fall

3 class hours/week

Explores the various ideologies, institutions, and processes that constitute the nation-states that make up the world political system. Any three political science courses meet the Social Science Sequence requirement for the AAOT degree. Recommended: Placement in RD-115.

PS-205 International Relations

3 credits, Spring
3 class hours/week

Analysis of relations among nations and the nature of international relations, including diplomacy, peacekeeping and war as instruments of foreign policy. Any three political science courses meet the Social Science Sequence requirement for the AAOT degree. Recommended: Placement in RD-115.

PS-206 Introduction to Political Theory

3 credits, Winter
3 class hours/week

Introduces the fundamental political question: What is justice? Examines the writings of political thinkers, such as Plato, Marx, Locke, and Madison. Any three political science courses meet the Social Science Sequence requirement for the AAOT degree. Recommended: Placement in RD-115.

PS-225 Introduction to Political Ideologies

3 credits, Fall
3 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. Any three political science courses meet the Social Science Sequence 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. Recommended: Placement in RD-115.

PSY-110 Psychology: An Overview

3 credits, Fall/Spring
33 hours/term

Telecourse/Campus TV. A general introduction to the field of psychology. Explores a wide variety of topics. Recommended: Placement in RD-115.

PSY-142 Personal Development/College Success

3 credits, not offered every year
3 class hours/week

Development of problem-solving skills in personal and academic situations, including goal setting and improving decision-making abilities. Recommended: Placement in RD-115.

PSY-200 Psychology As Natural Science

3 credits
Fall/Winter/Spring/Summer
3 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. PSY-200, PSY-205 and either PSY-218 or PSY-219 meets the Social Science Sequence requirement for the AAOT degree. Recommended: Placement in RD-115.

PSY-205 Psychology As a Social Science

3 credits, Fall/Winter/Spring
3 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. PSY-200, PSY-205 and either PSY-218 or PSY-219 meets the Social Science Sequence requirement for the AAOT degree. Recommended: Placement in RD-115.

PSY-214 Introduction to Personality

3 credits, Winter
3 class hours/week

Explores the major theories about personality and personality assessment. Each of the major theories are examined for its contribution as well as its limitations in explaining the development or organization of personality. Recommended: Placement in RD-115.

PSY-215 Introduction to Developmental Psychology

3 credits
Fall/Winter/Spring/Summer
3 class hours/week

Research and theories regarding the development of the individual from conception to death, including physical, social and cognitive changes. Recommended: Placement in RD-115.

PSY-216 Introduction to Social Psychology

3 credits, not offered every year
3 class hours/week

Examines how we think about and interact with others. Includes perception, attributions, aggression, attitude formation, attraction, intimacy, social influence, and prejudice. Recommended: Placement in RD-115.

PSY-218 Introduction to Experimental Psychology

3 credits, not offered every year
3 class hours/week

Introduction to the principles of the scientific method in general and to the specific methods used in psychological research. PSY-200, PSY-205 and either PSY-218 or PSY-219 meets the Social Science Sequence requirement for the AAOT degree. Recommended for students pursuing a psychology major. Recommended: Placement in RD-115.

PSY-219 Introduction to Abnormal Psychology

3 credits, Fall/Winter/Spring
3 class hours/week

Introduction to clinical psychology including disorders and approaches to therapy. PSY-200, PSY-205 and either PSY-218 or PSY-219 meets the Social Science Sequence 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

3 credits, Winter/Spring
3 class hours/week

Provides an overview of the theoretical background for different approaches to counseling. Recommended: Placement in RD-115.

PSY-231 Introduction to Human Sexuality

3 credits, Fall/Winter/Spring
3 class hours/week

Introduction to research and theories of human sexual behavior, including sexual relationships, communication and intimacy, sex therapy, sex roles, the development of gender, social trends regarding sexuality, and the biology of sexuality and conception. Recommended: Placement in RD-115.

PSY-240 Interpersonal Awareness & Growth

3 credits, Fall/Winter
3 class hours/week

Examines the dynamics of personality and explores techniques for overcoming self-defeating behaviors. Develops methods for making personal changes. 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**

3 credits, Fall/Winter/Spring
3 class hours/week

The nature of myth and story, ancient religions, ideas of God, Judaism, and introduction to religious topics. R-101/102/103 meets the Arts & Letters Sequence requirement for the AAOT degree. Recommended: Placement in RD-115.

R-102 Comparative Religions

3 credits, Fall/Winter/Spring
3 class hours/week

Covers written and oral sources, Christianity, Islam, and includes the history and philosophy of other Western religious developments. R-101/102/103 meets the Arts & Letters Sequence requirement for the AAOT degree. Recommended: Placement in RD-115.

R-103 Comparative Religions

3 credits, Fall/Winter/Spring
3 class hours/week

The history, ideas, and philosophy of the Eastern religions including Buddhism, Hinduism, and Taoism. R-101/102/103 meets the Arts & Letters Sequence requirement for the AAOT degree. Recommended: Placement in RD-115.

R-204 History of Christianity

3 credits, Fall
3 class hours/week

Covers early development of Christianity post-apostolic to early Medieval period. Includes investigation of basic theological tenets of the developing church. R-204/205/206 meets the Arts & Letters Sequence requirement for the AAOT degree. Recommended: Placement in RD-115.

R-205 History of Christianity

3 credits, Winter
3 class hours/week

Covers Medieval to Reformation and examines reactions, effects, and doctrinal development of the periods. Includes life and teachings of Reformers. R-204/205/206 meets the Arts & Letters Sequence requirement for the AAOT degree. Recommended: Placement in RD-115.

R-206 History of Christianity

3 credits, Spring
3 class hours/week

Focus on growth of Christianity in modern world. Includes current doctrinal interpretations, folk religions, and cults. R-204/205/206 meets the Arts & Letters Sequence requirement for the AAOT degree. Recommended: Placement in RD-115.

R-207 Judaic Studies: Scriptures & Development

3 credits, not offered every year
3 class hours/week

Jewish history emphasizing the Bible as a historical source. Traces the history of ancient Judaism up through the Jewish Revolt against Rome, the Talmudic Age, and the relationship between Judaism and Early Christianity. R-207/208/209 meets the Arts & Letters Sequence requirement for the AAOT degree. Recommended: Placement in RD-115.

R-208 Judaic Studies: The Diaspora, Conflict, and Kabala

3 credits, not offered every year
3 class hours/week

Explores the spread of Judaism through the Diaspora, the development of the Kabala, Judaism's relationship and conflicts with Christianity, and Islam in Western History through the Middle Ages and the Renaissance. R-207/208/209 meets the Arts & Letters Sequence requirement for the AAOT degree. Recommended: Placement in RD-115.

R-209 Judaic Studies: Holocaust & Modern Age

3 credits, not offered every year
3 class hours/week

Explores the experience of the Jewish people during the Holocaust, the creation of the State of Israel, and the Arab-Israeli conflicts. Explores attempts to achieve peace during the 19th through the 21st centuries and current Jewish practices. R-207/208/209 meets the Arts & Letters Sequence requirement for the AAOT degree. Recommended: Placement in RD-115.

R-210 World Religions

3 credits, Winter
3 class hours/week

Telecourse/Campus TV. An overview course that examines Eastern/Western religions and philosophies through film, text, and lecture. Introduces Hinduism, Buddhism, Chinese religions, Christianity, Judaism, and Islam. Recommended: Placement in RD-115.

R-211 History of the Old Testament

3 credits, not offered every year
3 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. Recommended: Placement in RD-115.

R-212 History of the New Testament

3 credits, not offered every year
3 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. 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 Reading/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 (formerly RD-010).

RD-090 Intermediate Reading Skills

3 credits, Fall/Winter/Spring

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 (formerly RD-012) or pass RD-080 (formerly RD-010).

RD-115 College Reading

3 credits, Fall/Winter/Spring

3 class hours/week

Emphasizes reading comprehension, critical reading and thinking, vocabulary development, and speed techniques for college-level reading. Prerequisite: Placement in RD-115 or pass RD-090 (formerly RD-012).

RD-120 Critical Reading

3 credits, Winter/Spring

3 class hours/week

Read and evaluate a variety of essays, articles, and short stories. Discuss literal, figurative, and inferential meanings. Prerequisite: Pass RD-115.

RE

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

Real Estate**RE-100 Introduction to Real Estate**

3 credits, not offered every term

3 class hours/week

Introductory course that assumes no prior real estate knowledge or experience. Provides general overview of functions performed, applicable laws and regulations, and major factors involved in real property transactions.

RE-110 Real Estate Practices

3 credits, not offered every term

3 class hours/week

Procedures involved in listing, selling, and closing of residential property. Emphasis on agency relationships, Oregon Real Estate License Law, listing agreements, client trust accounts, co-op transactions, neutral escrows, closing procedures, code of ethics. Recommended: RE-100.

RE-112 Real Estate Law I

3 credits, not offered every term

3 class hours/week

Survey of general and Oregon Real Estate Law as it applies to ownership, use, and transfer of real property. Emphasis on basic real property law. Recommended: RE-100.

RE-116 Real Estate Finance I

3 credits, not offered every term

3 class hours/week

Methods of financing the acquisition of real property. Emphasis on lending laws, mortgage market, financing documents, foreclosures, governmental loan programs, appraisals, mathematical calculations, and taxation. Recommended: RE-100.

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, Spring

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 designed for students without a background in the language. 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. For students without a background in Russian. Conducted in Russian as much as possible. Prerequisite: Pass RUS-102 or instructor consent.

RUS-201 Second-Year Russian
3 credits, not offered every year
3 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. Course is conducted in Russian as much as possible. Prerequisite: RUS-103 or instructor consent.

RUS-202 Second-Year Russian
3 credits, not offered every year
3 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. Prerequisite: RUS-201 or instructor consent.

RUS-203 Second-Year Russian
3 credits, not offered every year
3 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. 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-120 Greenhouse
Fall/Winter/Spring/Summer
3 class hours/week, 20 weeks

Comprehensive 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-121 Small Business Management I
Fall/Winter/Spring/Summer
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-122 Small Business Management II
Fall/Winter/Spring/Summer
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-123 Small Business Management III
Fall/Winter/Spring/Summer
3 class hours/month, 10 months
Third-year topics emphasize integrating strategies and business growth. Monthly evening class meetings plus individual business counseling. 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.

SKO

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

Reading

See also Study Skills (EL), Study Skills (OS) and Reading (RD).

SKO-010 Reading, Spelling, Vocabulary
1-3 credits
Fall/Winter/Spring/Summer
1-3 lab hours/week

Independent study of reading, spelling, and vocabulary building. Recommended: Placement in RD-090 (formerly RD-012).

SOC

Sociology

SOC-204 Introduction to Sociology
3 credits, Fall/Winter/Spring/Summer
3 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. SOC-204/205/206 meets the Social Science Sequence 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

3 credits, Fall/Winter/Spring
3 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. SOC-204/205/206 meets the Social Science Sequence requirement for the AAOT degree. Also offered as a tele-course. Recommended: Placement in RD-115 & placement in WR-121.

SOC-206 Institutions and Social Change

3 credits, Fall/Winter/Spring
3 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. SOC-204/205/206 meets the Social Science Sequence requirement for the AAOT degree. Also offered as a tele-course. Recommended: Placement in RD-115 & placement in WR-121.

SOC-223 Psycho-Social Aspects of Aging

3 credits, Winter/Spring
3 class hours/week

An individual and societal perspective. Emphasis on normal versus abnormal aging, major life transitions, and providing services to the aged. Recommended: Placement in WR-121.

SOC-225 Social Problems

3 credits, Fall/Winter/Spring
3 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. Recommended: Placement in RD-115 & placement in WR-121.

SOC-230 Perspectives on Aging

3 credits, Fall
3 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/socialological. Networks of programs to serve the aged: governmental/families, and formal/informal. Recommended: Placement in WR-121.

SOC-231 Health & Biological Aspects of Aging

3 credits, Winter
3 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. Recommended: Placement in WR-121.

SOC-232 Encounters With Death

3 credits, Spring
3 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. 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

3 credits
Fall/Winter/Spring/Summer
3 class hours/week

Practice in organization, research, and delivery of a variety of speeches. SP-111, SP-112, SP-126 & SP-219, any three, meet Arts & Letters Sequence requirement for the AAOT degree. Note: Certain sections of SP-111 meet the computer literacy requirement. Prerequisites: Placement in RD-115 & placement in WR-121.

SP-112 Persuasive Speaking

3 credits, Winter
3 class hours/week

Persuasive speaking, audience analysis, study of reasoning, and the basic theories of persuasion. SP-111, SP-112, and SP-126 & SP-219, any three, meet Arts & Letters Sequence requirement for the AAOT degree. Prerequisites: Placement in RD-115 & placement in WR-121.

SP-115 Introduction to Intercultural Communication

3 credits, Spring
3 class hours/week

Explores impact cultural differences have on communication process, increases awareness of students' own cultural behaviors. Explores the cultural differences between cultures. Discover effective ways to deal with difficult situations where a cultural difference causes a problem. Required: Instructor consent.

SP-126 Communication Between Sexes

3 credits, Fall/Winter/Spring
3 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. SP-111, SP-112 and SP-126 & SP-219, any three, meet Arts & Letters Sequence requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

SP-129 Oral Interpretation

1-3 credits, Fall/Winter/Spring
3 class hours/week

Oral interpretation of literature from the areas of prose, poetry and drama. Analyze specific literary works and communicate understanding through performance. 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-150 Competitive Platform Speaking

1-3 credits, Fall/Winter/Spring
3 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. 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
1-3 credits, Fall/Winter/Spring
3 class hours/week

The principles and practice of parliamentary procedure to develop skills in conducting business during meetings. 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
3 credits, offered every other year
3 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. SP-211, SP-218 & SP-219 meet the humanities and arts sequence 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
3 credits, not offered every term
3 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. SP-211, SP-218 & SP-219 meet the Arts & Letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

SP-219 Small Group Communication
3 credits, not offered every term
3 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. SP-111, SP-112, SP-126 & SP-219 or SP-211, SP-218 & SP-219, any three, meet the Arts & Letters Sequence requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

SP-221 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. 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 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. 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 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. 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 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. 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 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. 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 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. 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
1-3 credits, Fall/Winter/Spring
3 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. 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
1-3 credits, Fall/Winter/Spring
3 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. 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
1-3 credits, Fall/Winter/Spring
3 class hours/week

The principles and practice of parliamentary procedure to develop skills in conducting business during meetings. 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, Summer/Fall/Winter
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. When offered winter and/or spring term, course continues in summer as intensive Spanish or as study in Mexico or Spain. 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-111 Spanish Conversation
3 credits, Fall
3 class hours/week

A conversation course emphasizing the development of oral proficiency in Spanish. Topics will include conversing in situation encountered in everyday life. The grammar of the language will be covered only insofar as it supports realistic conversation and is necessary for clarification. Prerequisite: SPN-101 or instructor consent.

SPN-112 Spanish Conversation
3 credits, Winter
3 class hours/week

A continuation of SPN-111 with additional emphasis on reading, comprehending, and discussing written and oral publications. Prerequisite: SPN-111 or instructor consent.

SPN-113 Spanish Conversation
3 credits, Spring
3 class hours/week

A continuation of SPN-112 with opportunities for students to explore and discuss areas of personal interest at a deeper level. Prerequisite: SPN-112 or instructor consent.

SPN-120 Spanish for Health Professionals
3 credits, not offered every term
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. SPN-201/202/203 meets Arts & Letters Sequence 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. SPN-201/202/203 meets Arts & Letters Sequence 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. SPN-201/202/203 meets Arts & Letters Sequence requirement for the AAOT degree. Prerequisite: Pass SPN-202 or instructor consent.

SPN-214 Spanish for Native Speakers
4 credits, Fall
4 class hours/week

First of a three-term sequence that focuses on reading development, orthography, lexical expansion, and the formal grammar of standard Spanish. Course includes presentation of literary genres, such as the short story, and examines contrasts between forms of popular Spanish and written Spanish. Prerequisite: Native or near-native ability in Spanish.

SPN-215 Spanish for Native Speakers
4 credits, Winter
4 class hours/week

Second of a three-term sequence that focuses on reading development, orthography, lexical expansion, and the formal grammar of standard Spanish. Course includes presentation of literary genres, such as the short story, and examines contrasts between forms of popular Spanish and written Spanish. Prerequisite: Pass SPN-214 or instructor consent.

SPN-216 Spanish for Native Speakers
4 credits, Spring
4 class hours/week

Third of a three-term sequence that focuses on reading development, orthography, lexical expansion, and the formal grammar of standard Spanish. Course includes presentation of literary genres, such as the short story, and examines contrasts between forms of popular Spanish and written Spanish. Prerequisite: Pass SPN-215 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. SSC-150/151/152 meets the Social Science Sequence requirement for the AAOT degree. Sequence also meets 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 management of the Columbia River Basin and its resources, with Portland as the metropolis of the watershed. Includes field trips. SSC-150/151/152 meets the Social Science Sequence requirement for the AAOT degree. Sequence also meets 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. SSC-150/151/152 meets the Social Science Sequence requirement for the AAOT degree. Sequence also meets the University Studies Freshman Inquiry requirement at PSU. Meets computer literacy requirement. Prerequisite: Pass SSC-151.

SSC-160 Faith & Reason [C]**5 credits, Fall****3 class, 2 TBA 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. SSC-160/161/162 meets the Social Science Sequence requirement for the AAOT degree. Sequence also meets 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****3 class, 2 TBA 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. SSC-160/161/162 meets the Social Science Sequence requirement for the AAOT degree. Sequence also meets the University Studies Freshman Inquiry requirement at PSU. Meets computer literacy requirement. Prerequisite: SSC-160.

SSC-162 Faith & Reason [C]**5 credits, Spring****3 class, 2 TBA 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. SSC-160/161/162 meets the Social Science Sequence requirement for the AAOT degree. Sequence also meets the University Studies Freshman Inquiry requirement at PSU. Meets computer literacy requirement. Prerequisite: SSC-161.

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. Any three 200-level Social Science Inquiry courses meets the Social Science Sequence 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. Any three 200-level Social Science Inquiry courses meet the Social Science Sequence 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. Any three 200-level Social Science Inquiry courses meets the Social Science Sequence requirement for the AAOT degree and the University Studies Sophomore Inquiry requirement at PSU. Recommended: Placement in RD-115 & placement in WR-121.

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. Any three 200-level Social Science Inquiry courses meets the Social Science Sequence 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. Any three 200-level Social Science Inquiry courses meets the Social Science Sequence 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. Any three 200-level Social Science Inquiry courses meets the Social Science Sequence 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. Any three 200-level Social Science Inquiry courses meets the Social Science Sequence 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. Any three 200-level Social Science Inquiry courses meets the Social Science Sequence 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. Any three 200-level Social Science Inquiry courses meet 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. Any three 200-level Social Science Inquiry courses meet 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

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. Any three 200-level Social Science Inquiry courses meet 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

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. Any three 200-level Social Science Inquiry courses meet 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**

3 credits, Fall
3 hours/week

Develop personal understanding of theatre by attending productions. Plays are reviewed and evaluated in written form and in group discussion. TA-101/102/103 meets humanities and arts sequence requirement for the AAOT degree.

TA-102 Appreciation of Theatre Arts

3 credits, Winter
3 hours/week

Develop personal understanding of theatre by attending productions. Plays are reviewed and evaluated in written form and in group discussion. TA-101/102/103 meets humanities and arts sequence requirement for the AAOT degree.

TA-103 Appreciation of Theatre Arts

3 credits, Spring
3 hours/week

Develop personal understanding of theatre by attending productions. Plays are reviewed and evaluated in written form and in group discussion. TA-101/102/103 meets humanities and arts sequence 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.

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.

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.

TA-141 Acting I

3 credits, Fall
3 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. TA-141/142/143 meets the Arts & Letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

TA-142 Acting II

3 credits, Winter
3 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. TA-141/142/143 meets the Arts & Letters requirement for the AAOT degree. Recommended: Placement in RD-115 & WR-121.

TA-143 Acting III

3 credits, Spring
3 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. TA-141/142/143 meets the Arts & Letters requirement for the AAOT degree. Recommended: Placement in RD-115 & placement in WR-121.

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. 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. TA-211/212/213 meets the Arts & Letters Sequence 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. TA-211/212/213 meets the Arts & Letters Sequence 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. TA-211/212/213 meets the Arts & Letters Sequence 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

3 credits, not offered every term
3 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. TA-241/242/243 meets the Arts & Letters Sequence 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

3 credits, not offered every term
3 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. TA-241/242/243 meets the Arts & Letters Sequence 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

3 credits, not offered every term
3 class hours/week

Theory, philosophy and practice of play directing. Casting and rehearsal of players, production organization, script analysis and scene building. TA-241/242/243 meets the Arts & Letters Sequence 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. 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.

TPH

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

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.

WQT

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

Water & Environmental Technology**WQT-010 Wastewater Operations I**

3 credits, Fall
4 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
4 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
4 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
4 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 sludge handling. 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

4 credits, Fall
4 class hours/week

Introduction to the fundamentals of wastewater treatment plant operation. Includes collections systems, preliminary and primary treatment, waste characteristics including organic removals, and solids profiles. Prerequisite: Pass MTH-065

WQT-111 Waterworks Operations I

4 credits, Fall
4 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. Prerequisite: Pass MTH-065.

WQT-120 Wastewater Operations II

4 credits, Winter
4 class hours/week

Secondary wastewater treatment alternatives with municipal application. Fixed and suspended film systems and clarification process. Includes biological sludge treatment. Prerequisite: Pass WQT-110.

WQT-121 Waterworks Operations II

4 credits, Winter
4 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. Prerequisite: Pass WQT-111.

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 Ultrapure 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 ultrapure water chemistry, reverse osmosis treatment, ion exchange treatment, electrodeionization treatment, UV, ozonation, degassification, and microfiltration. Prerequisite: Pass CH-104.

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 given to sludge handling. Lab includes field trips to local wastewater facilities. Prerequisite: Pass WQT-120. Corequisite: WQT-180.

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, related math, 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 Ultrapure Water Production II

3 credits, Spring
3 class 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-240 Special Topics Seminar

4 credits, Fall
4 class hours/week

Covers subjects of current or emerging significance in the water and wastewater industry. Topics include: industrial pretreatment and source control, surface (storm) water management, wastewater biological nutrient removal, and wastewater biosolids management.

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 ultrapure water facilities. Advanced water analysis to include typical monitoring of UPW 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 discussions will be addressed.

WR**Writing****WR-080 Basic Writing Skills**

1-3 credits, Fall/Winter/Spring
3 class hours/week

Utilizes an individualized and group approach that includes three individual credits: Capitalization/Punctuation, Sentence Construction, and Sentence to Paragraph. Prerequisite: Placement in WR-080 (formerly WR-010).

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 (formerly WR-011) or pass WR-080 (formerly WR-010).

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 (formerly WR-011).

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. 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. WR-121, WR-122 & WR-123 or WR-227 meets the writing sequence requirement for the AAOT degree. Note: Certain sections of WR-121 meet the computer literacy requirement. 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. WR-121, WR-122, & WR-123 or WR-227 meets the writing sequence requirement for the AAOT degree. Certain sections of WR-122 meet the computer literacy requirement. 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. WR-121, WR-122 & WR-123 or WR-227 meet the writing sequence requirement for the AAOT degree. Recommended: Placement in RD-115. Prerequisite: Pass WR-121 & pass WR-122.

WR-165 Writing on the Worldwide Web [C]

3 credits, not offered every term
3 class hours/week

Theoretical background and practical skills necessary to write effectively on the World Wide Web in situations ranging from composing E-mail to creating Web site content. It is strictly a writing class. Prerequisites: Pass WR-121 & pass CS-125H or instructor approval

WR-185 Practical Grammar

3 credits, not offered every year
3 class hours/week

Nature of English grammar: sentence, parts of speech, phrases, clauses, verbals, sentence patterns, syntax, levels of usage, spelling, punctuation. NOT a remedial course. Recommended: Placement in RD-115 & placement in WR-121.

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. WR-121, WR-122 & WR-123 or WR-227 meets the writing sequence requirement for the AAOT degree. Recommended: Placement in RD-115. Prerequisite: Pass WR-121 & pass WR-122.

WR-241 Creative Writing: Fiction

3 credits, Fall/Winter
3 class hours/week

Techniques of creative writing and the development of critical appreciation of the art of writing fiction. Recommended: Placement in RD-115. Prerequisite: Placement in WR-121 or instructor consent.

WR-242 Creative Writing: Poetry

3 credits, Fall/Winter
3 class hours/week

Techniques of creative writing and the development of critical appreciation of the art of writing poetry. Recommended: Placement in RD-115. Prerequisite: Placement in WR-121 or instructor consent.

WR-243 Creative Writing: Playwriting

3 credits, Fall/Winter
3 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. Recommended: Placement in RD-115. Prerequisite: Placement in WR-121 or instructor consent.

WR-244 Advanced Fiction Writing

3 credits, Spring
3 class hours/week

Skill and knowledge development for fiction writers with previous experience. Recommended: Placement in RD-115. Prerequisite: Pass WR-241 or instructor consent.

WR-245 Advanced Poetry Writing

3 credits, Spring
3 class hours/week

Technique and knowledge development for poetry writers with previous experience. Recommended: Placement in RD-115. Prerequisite: Pass WR-242 or instructor consent.

WR-246 Editing & Publishing [C]

3 credits, Spring
3 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 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

3 credits, Spring
3 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. Recommended: Placement in RD-115. Prerequisite: Pass WR-243 or instructor consent.

WR-262 Introduction to Screenwriting

3 credits, Winter
3 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. Recommended: Placement in RD-115. Prerequisite: Placement in WR-121 or instructor consent.

WR 263 Advanced Screenwriting

3 credits, Spring
3 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. 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**

3 credits, Fall/Spring
3 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. Recommended: Placement in RD-115.

Z**Zoology****Z-201 General Zoology**

4 credits, not offered every term
3 class, 3 lab hours/week

Covers cellular and molecular basis of animal life including genetics, evolution, systematics, and protist diversity. Z-201/202/203 meets the science sequence 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 term
3 class, 3 lab hours/week

Covers the maintenance of the cellular environment in animal systems, behavior, and diversity of the less complex invertebrate animal phyla to acoelomates. Z-201/202/203 meets the science sequence 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 term
3 class, 3 lab hours/week

Covers diversity of the more complex invertebrates and vertebrates ecology. Z-201/202/203 meets the science sequence requirement for the AAOT degree. Recommended: Pass MTH-105 or pass MTH-111; placement in RD-115 & placement in WR-121.

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.

Absences

Make sure you attend your first day of class! If you can't make it to your first class session, contact your instructor in advance. If you don't, you may be administratively withdrawn from any class with a wait list at the instructor's option. 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 Veteran's benefits, you may owe a repayment. 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 register for a course after the class has started, you must get the instructor's approval and signature on an add/drop form.
- No registration or schedule changes are accepted after the 8th week of the term.
- To officially drop a course or withdraw from college, you must file an Add/Drop Request with the Registrar's Office or drop via the Web or by telephone. (Ceasing to attend class does not constitute official withdrawal.)
- Drops or withdrawals after the sixth week of the term require the signature of the instructor. These courses will appear on your transcript with a "w" in the grade column. In order to drop a course without responsibility for a grade, your add/drop request must be filed before the end of the sixth week of the term.

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 Help Center in the Community Center building 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.

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	Community college courses resulting in transcribed academic credit which may be applied toward a degree and/or certificate. May also transfer to other institutions.
10 through 99	Community college courses resulting in transcribed academic credit which may be applied toward a degree and/or certificate and 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.

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. A grade of incomplete is not available in variable credit courses.

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 Help Center or the 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.

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.

Grades

Letter grades are used to indicate the quality of work done. 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	0
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, not grade points earned	N/A

Audit

An Audit allows you to attend class without responsibility for a grade. Audit carries no credit and does not contribute towards full-time student status. Audited courses do not meet full-time status required 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, you must talk to 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.

Continued

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 that term.

Incomplete

A grade of Incomplete indicates that the quality of work is satisfactory but that 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 sixth 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% of your enrolled hours (not including hours dropped or changed to audit by the official refund date), 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 drop period of the next term of enrollment in order to draw up a plan for improving your academic work. This term will be called your academic alert term.

If you complete 50% 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% 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% 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, Nursing; are international students; participate in college athletics; or who receive scholarships.

Transcripts

Official transcripts of your course work at CCC may be ordered in person, by written request or FAX through the Registrar's Office. Official transcripts cost \$5 each; unofficial transcripts are available by going to the Web at <http://www.clackamas.cc.or.us>

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 graduating must petition for graduation, preferably at least two terms prior to the term in which they expect to finish. Petitions for graduation may be obtained from the Help Center, Advising & Counseling Center, Registrar's Office, or by going to the Web at <http://www.clackamas.cc.or.us>.

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.

The degree requirements in this catalog are valid for five years following the summer term of 2002. When you are ready to graduate, you may choose to meet the program requirements of either the catalog which was current during the first term you attended CCC, or the requirements contained in the current catalog at the time you graduate.

Personal Rights & Privileges

Family Educational Rights & Privacy Act

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.*

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 our *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

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.

Release of Information

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.

Continued

- 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 verbal request to anyone:

1. Your 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 I.D. Cards

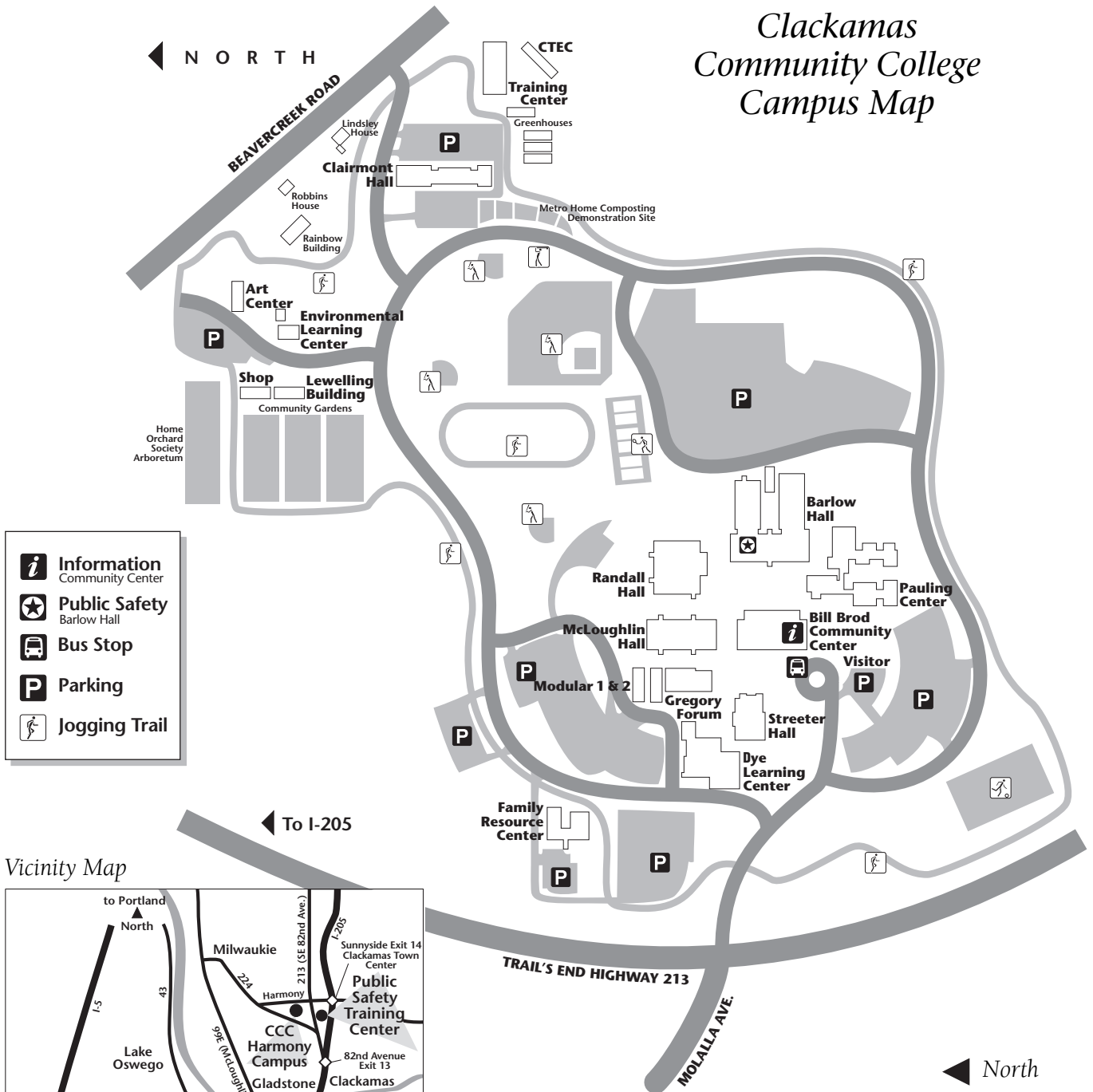
Photo student I.D. cards are available at the Help Center in the Community Center building. You'll need this card for transactions on campus, including library checkout, access to computer and tutorial labs, the Assessment Center, enrollment verification, and admission to college events. Picture identification will be required to obtain your photo I.D. card.

Map, Services, Activities, Special Programs

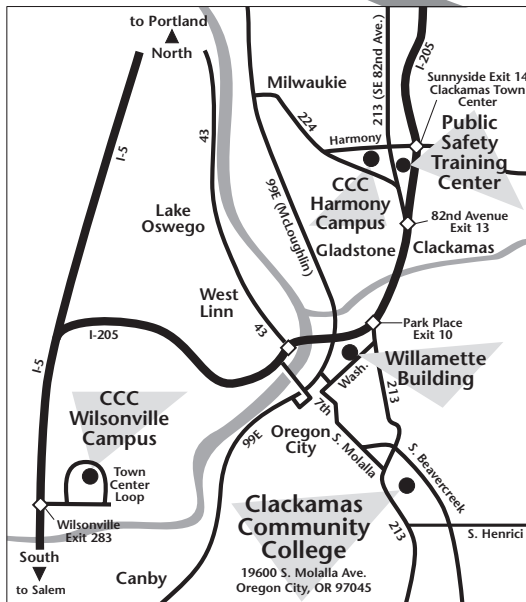
Maps

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Clackamas Community College Campus Map



Vicinity Map



Addresses:

Clackamas Community College
19600 South Molalla Avenue
Oregon City, OR 97045-7998

CCC Harmony Campus
7616 S.E. Harmony Road
Milwaukie, OR 97222

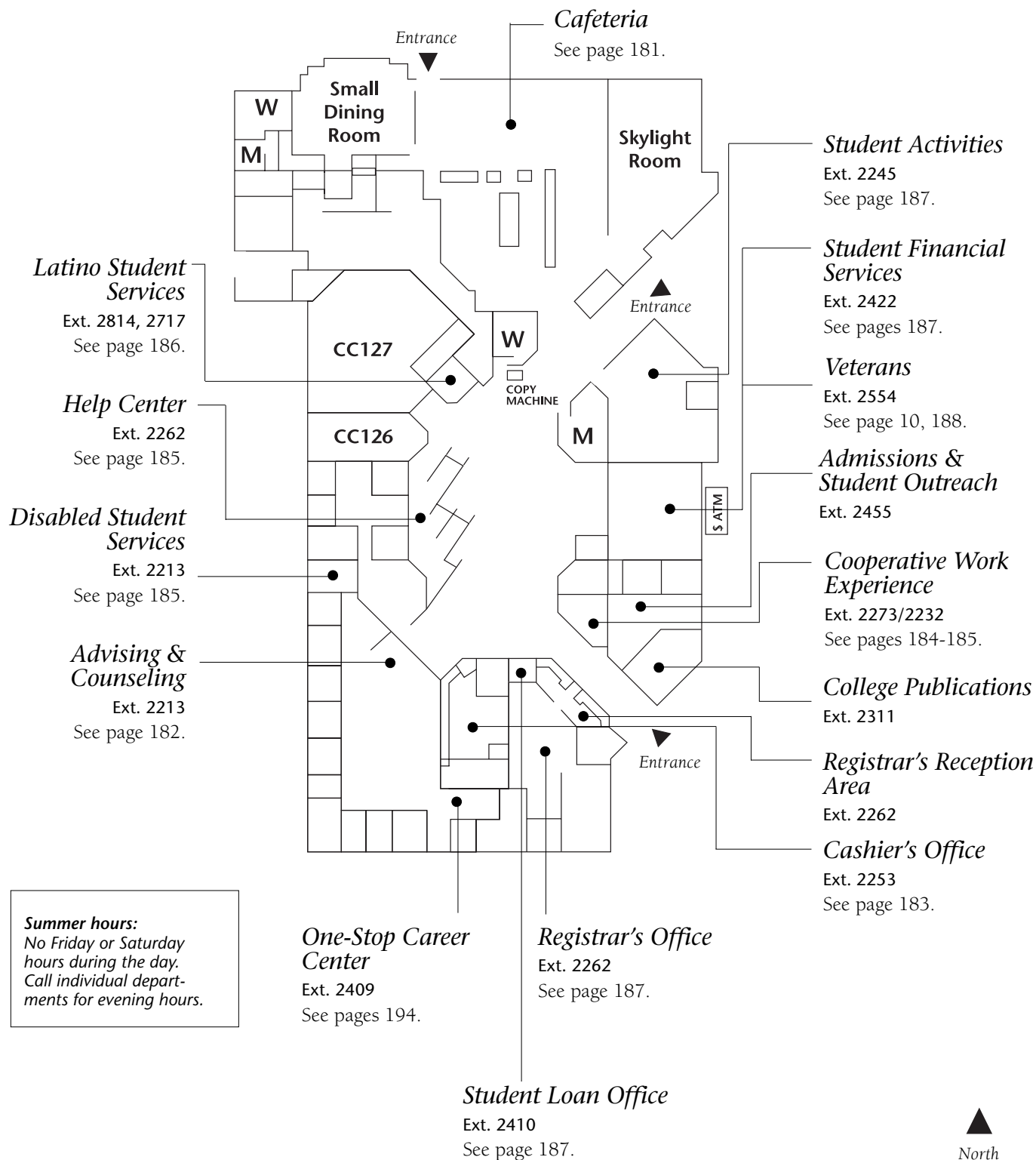
CCC Wilsonville Campus
29353 Town Center Loop E
Wilsonville, OR 97070

Public Safety Training Center
12700 S.E. 82nd Avenue
Clackamas, OR 97015-9793

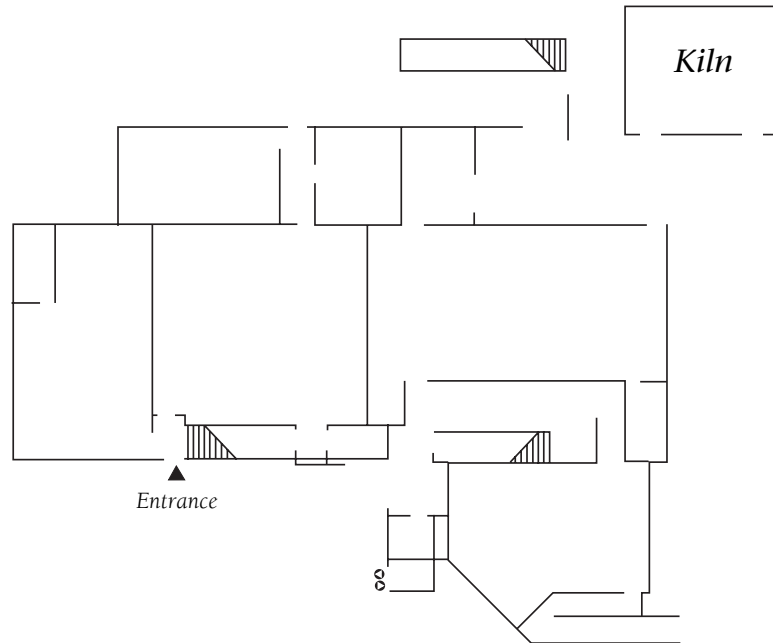
Willamette Building
108 11th Street
Oregon City, OR 97045

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

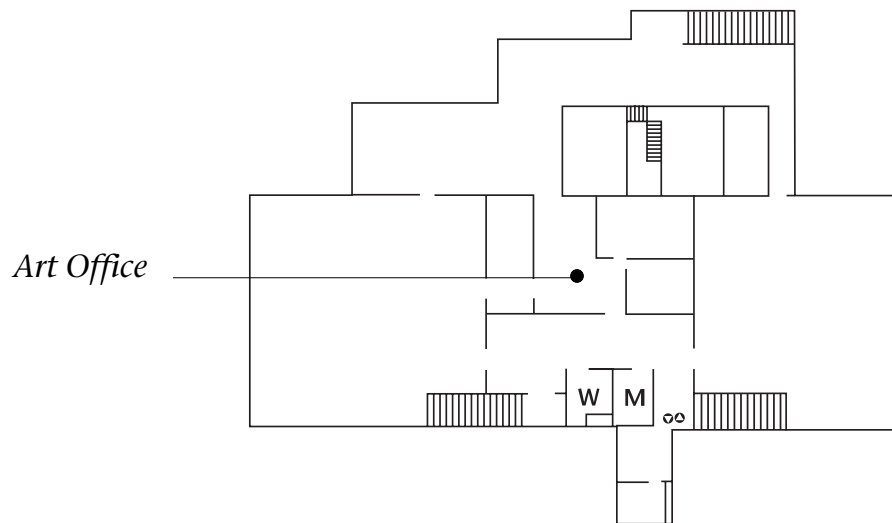
Bill Brod Community Center



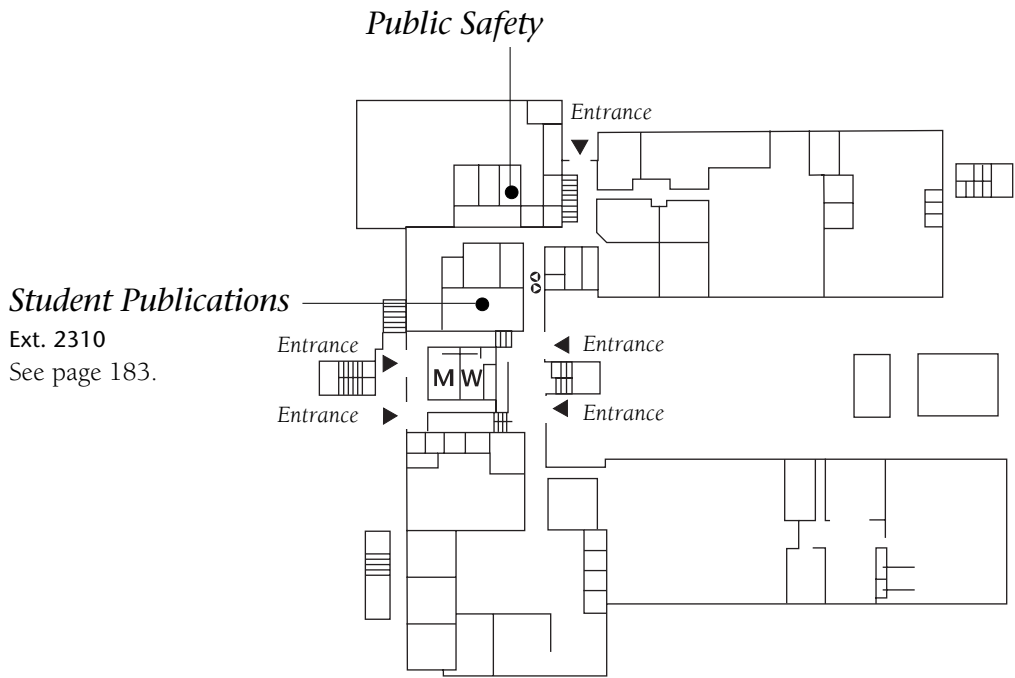
Art Center (1st floor)



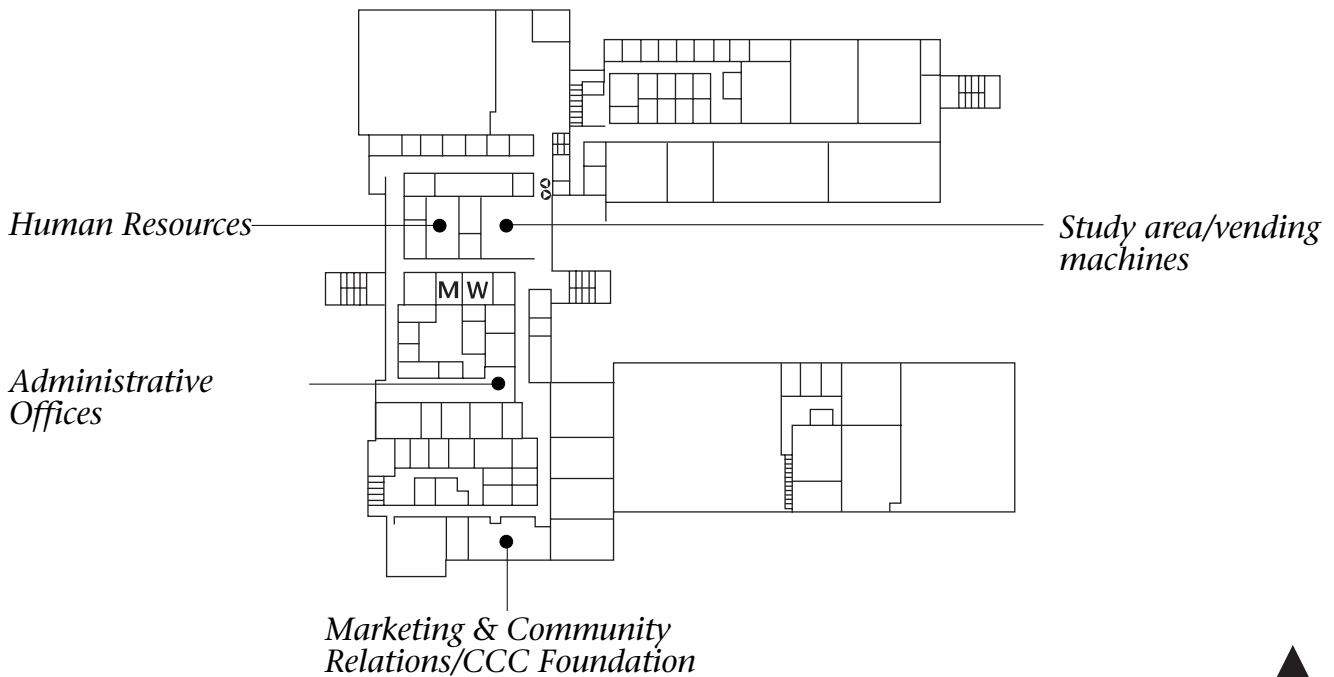
Art Center (2nd floor)



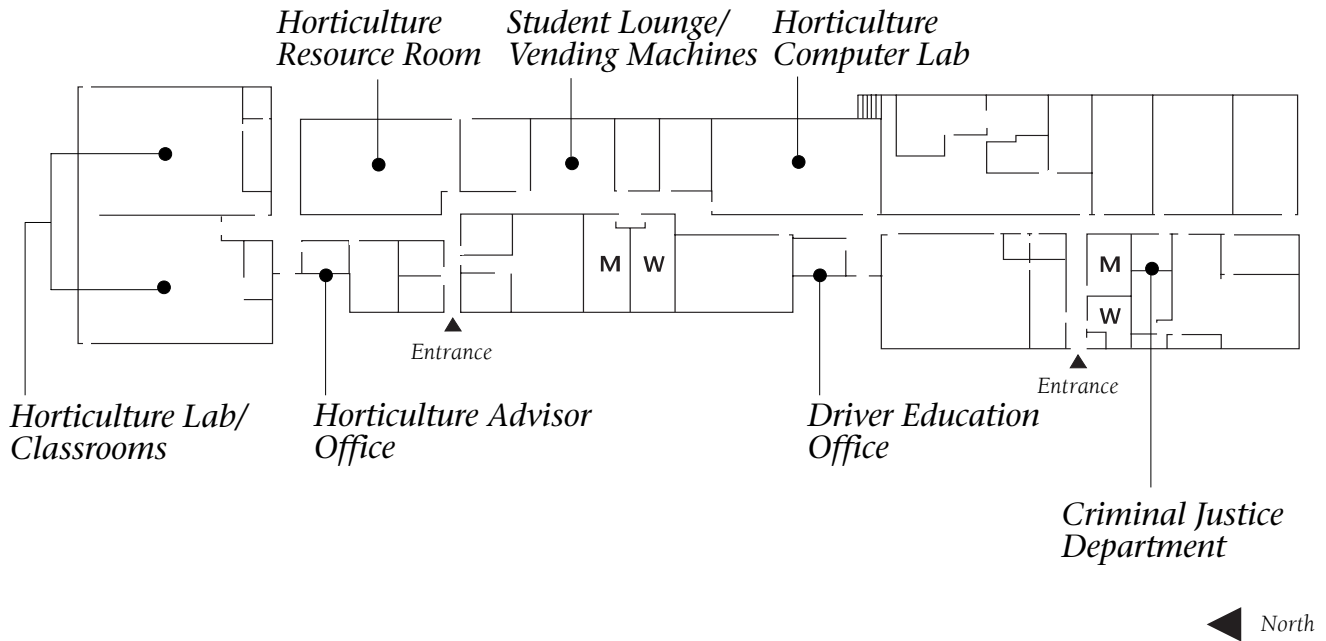
Barlow Hall (1st floor)



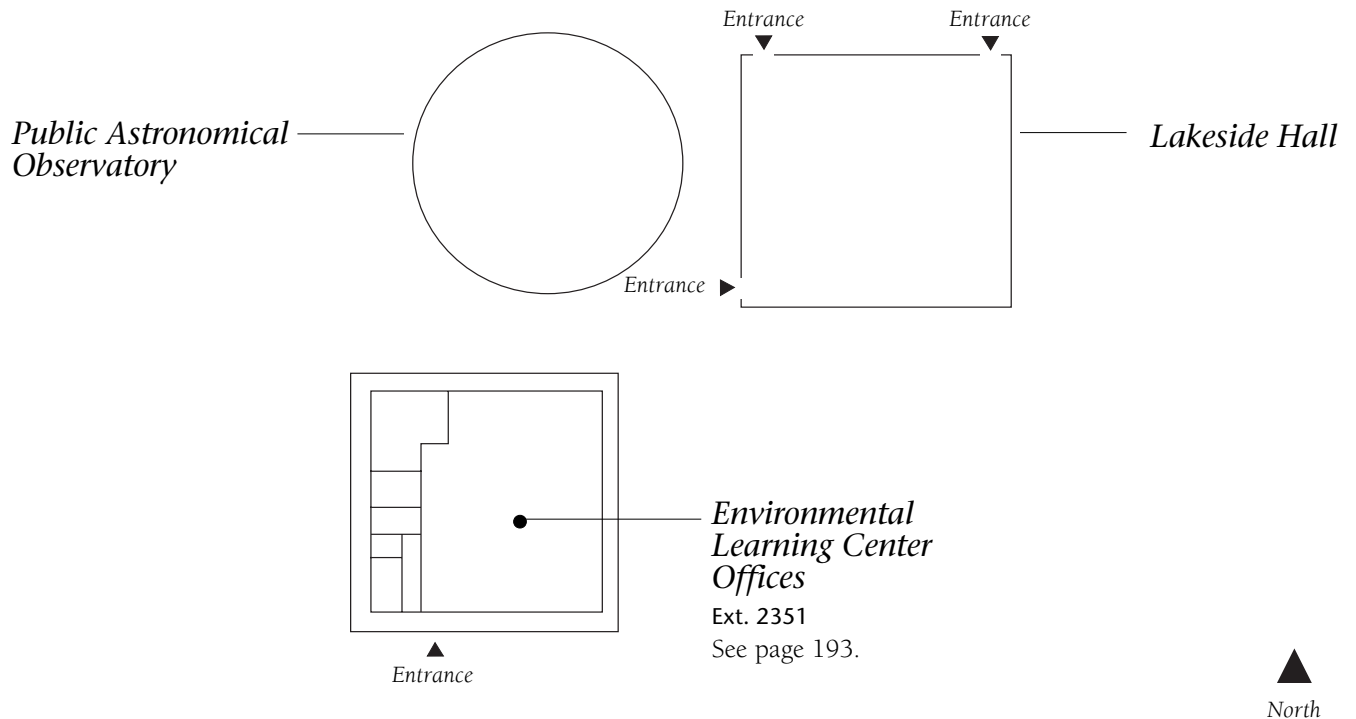
Barlow Hall (2nd floor)



Clairmont Hall



John Inskeep Environmental Learning Center



Elizabeth McClung Brod Family Resource Center

*Women's Resource
Center*

Ext. 2526
See page 189.

*Life & Career Options
Program*

Ext. 2526
See page 192.

*FRC Programs
Information*

Ext. 2456
See page 191-192.

Bridges Program

Ext. 2133
See page 191.

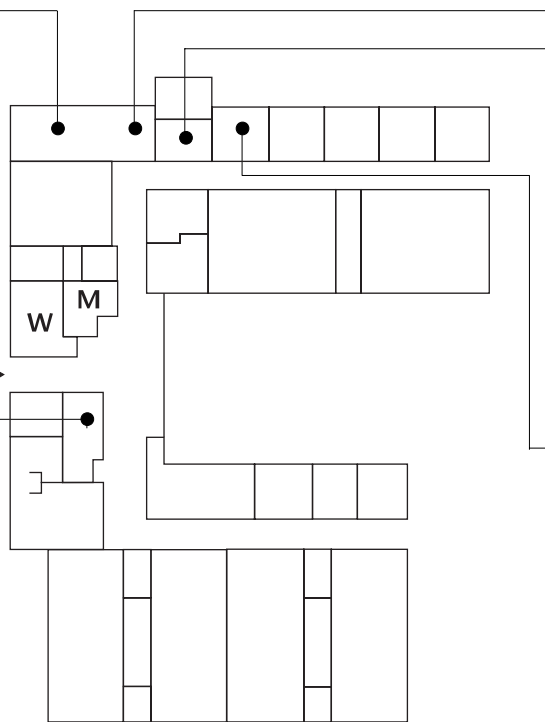
*Young Parent
Opportunity Program*

Ext. 2592
See page 190.

Child Care

503-657-9795
See pages 183.

Entrance ▶



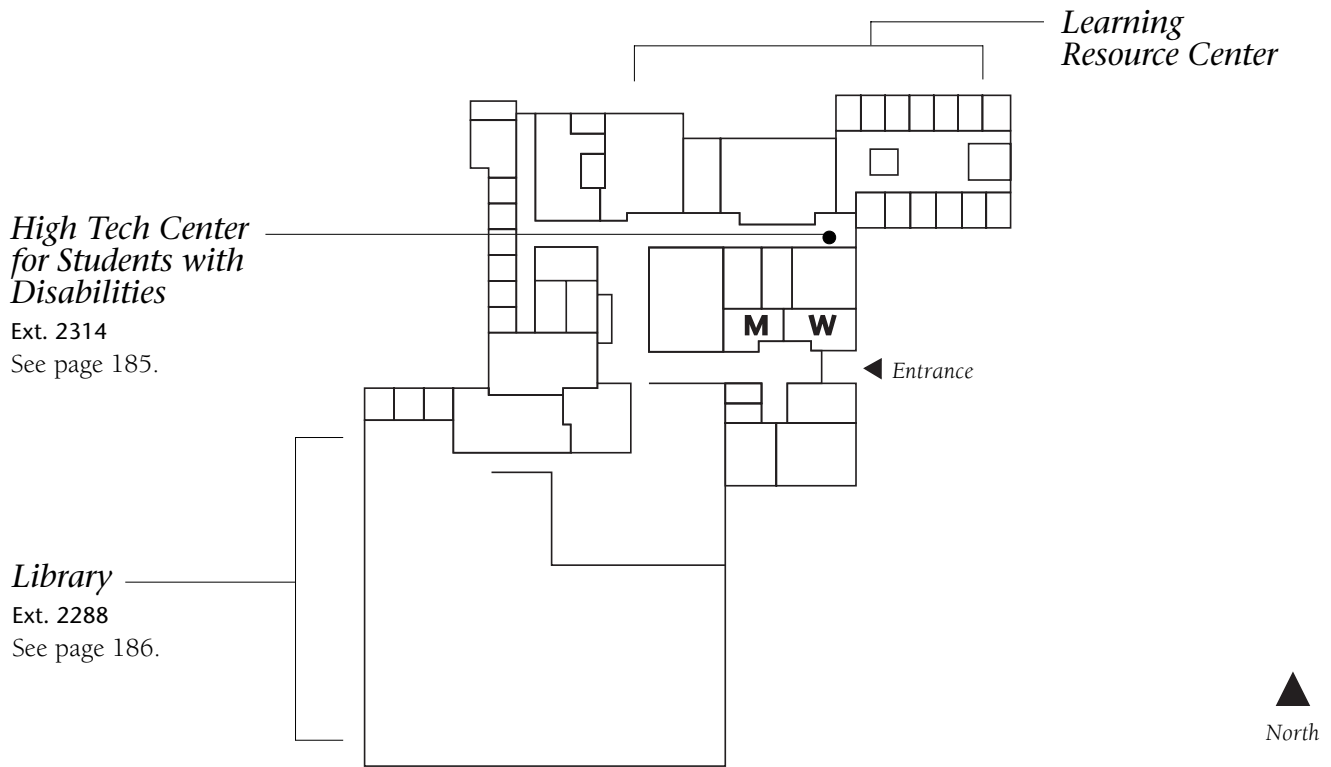
▲
North

Gregory Forum



◀ North

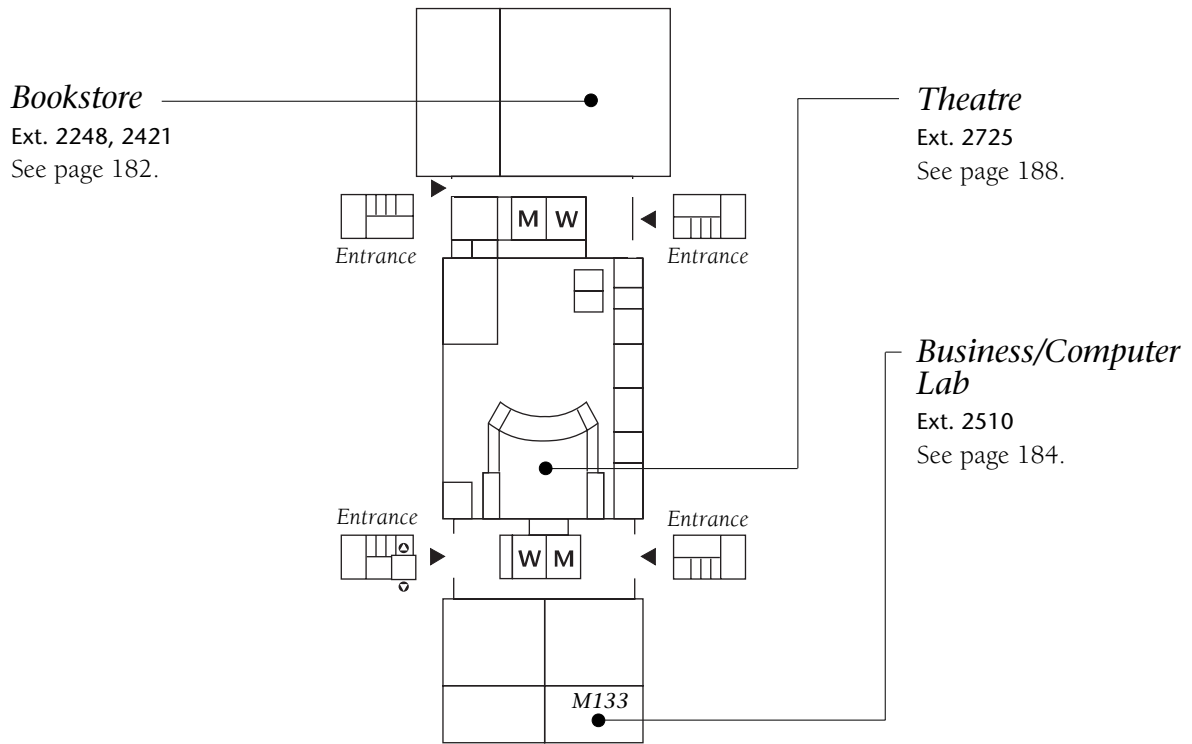
Eva Emery Dye Learning Resource Center



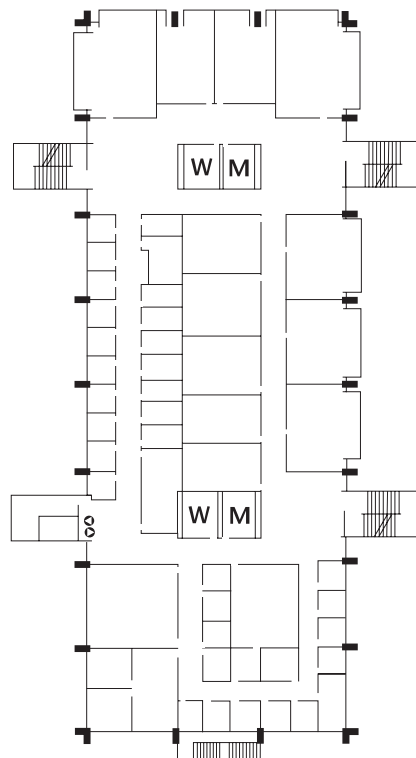
INSTRUCTIONAL DEPARTMENT	BUILDING	INSTRUCTIONAL DEPARTMENT	BUILDING
<i>Accelerated Clackamas Degree</i>	McLoughlin Hall, 2nd floor	<i>Foreign Language</i>	Barlow Hall, 2nd floor
<i>Apprenticeship/Building Construction</i> ...	Training Center	<i>Horticulture</i>	Clairmont Hall
<i>Art</i>	Art Center	<i>Life Science</i>	Pauling Center
<i>Automotive /Parts Merchandising</i>	Barlow Hall 1.5 floor	<i>Manufacturing</i>	Barlow Hall, 1.5 floor
<i>Business</i>	McLoughlin Hall, 2nd floor	<i>Mathematics</i>	Streeter Hall
<i>Communication/Theatre Arts</i>	McLoughlin Hall, 1st floor	<i>Music</i>	Randall Hall, 2nd floor
<i>Computer Science</i>	Streeter Hall	<i>Nursing</i>	Barlow Hall, 2nd floor
<i>Community Education</i>	Harmony Campus*	<i>Physical Education/Health</i>	Randall Hall, basement
<i>Cooperative Work Experience</i>	Barlow Hall, 1.5 floor & Comm.Ctr.	<i>Physical Science</i>	Pauling Center
<i>Criminal Justice</i>	Clairmont Hall	<i>Skills Development</i>	Dye Learning Resource Center
<i>Drafting</i>	Barlow Hall, 1.5 floor	<i>Small Business Center</i>	Harmony Campus*
<i>Education & Human Services</i>	Family Resource Center	<i>Social Science</i>	McLoughlin Hall, 2nd floor
<i>Engineering/Water Quality</i>	Pauling Center		
<i>English</i>	Streeter Hall		
<i>English as a Second Language</i>	Dye Learning Resource Center		
<i>Environmental Learning Center</i>	Environmental Learning Center		

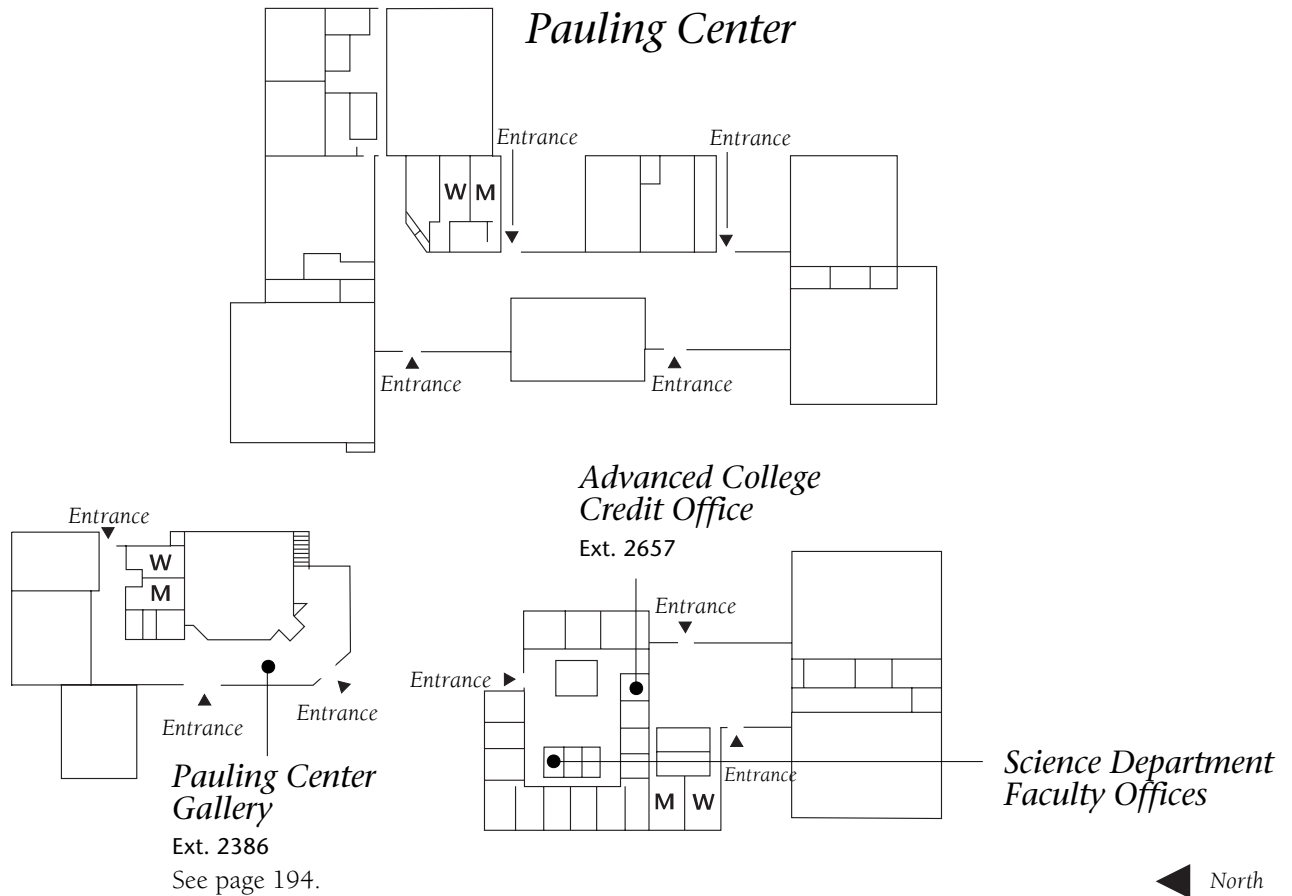
* Off-campus location. See campus map page 169.

McLoughlin Hall (1st floor)

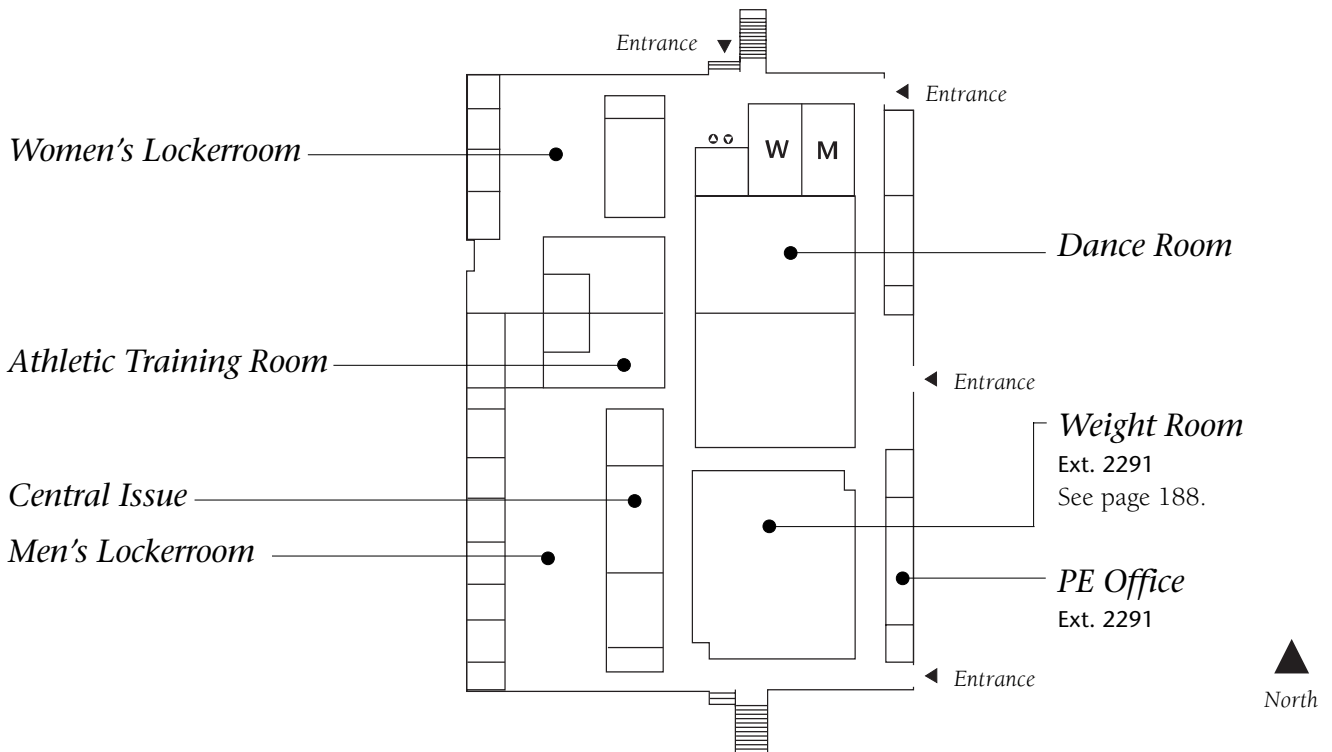


McLoughlin Hall (2nd floor)



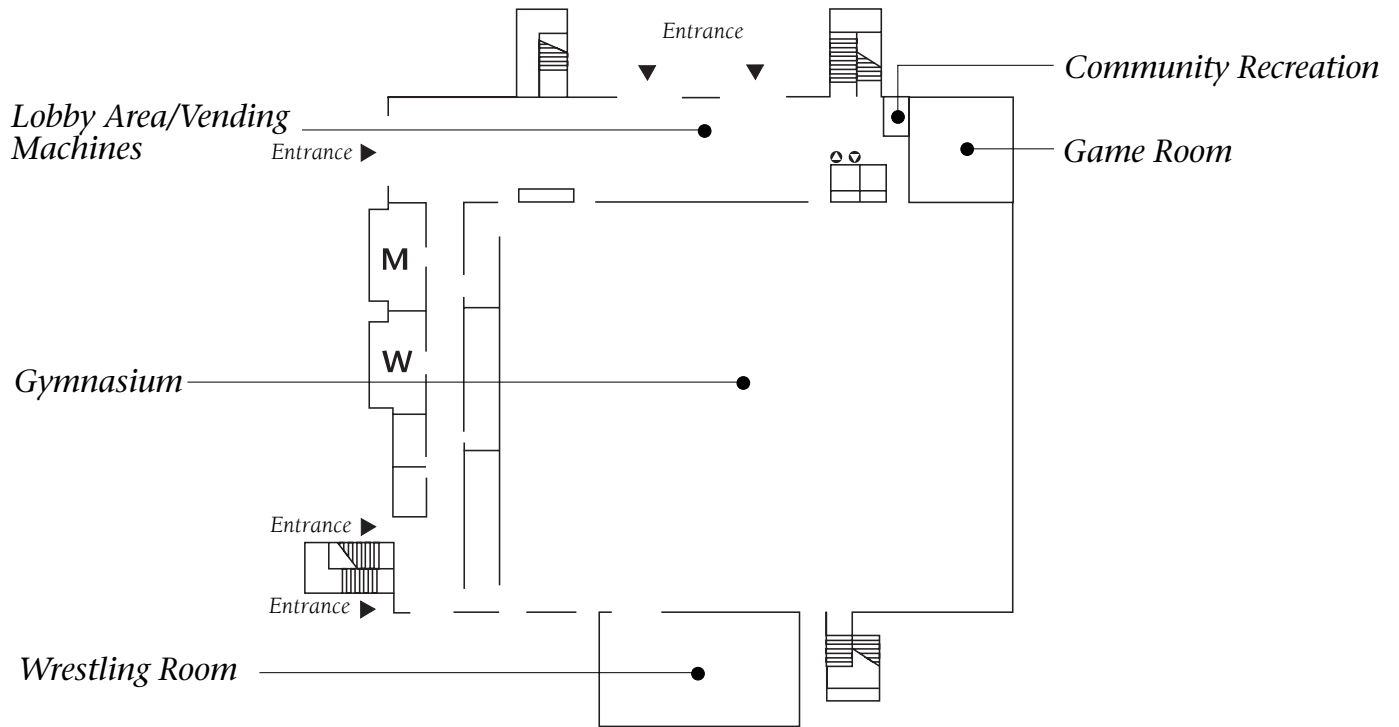


Randall Hall (ground floor)

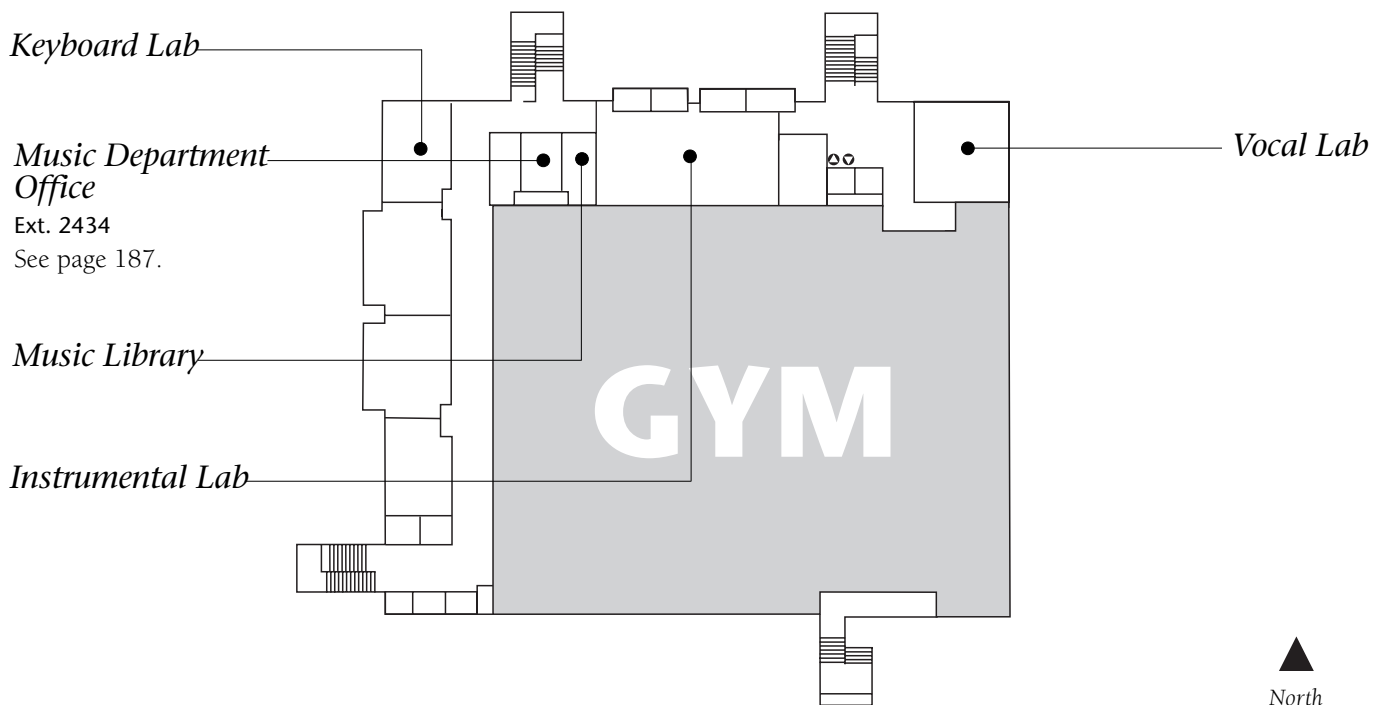


To reach any college office, call 503-657-6958 and dial the extension you want. (Hearing-impaired TTY/TDD 503-650-6649)

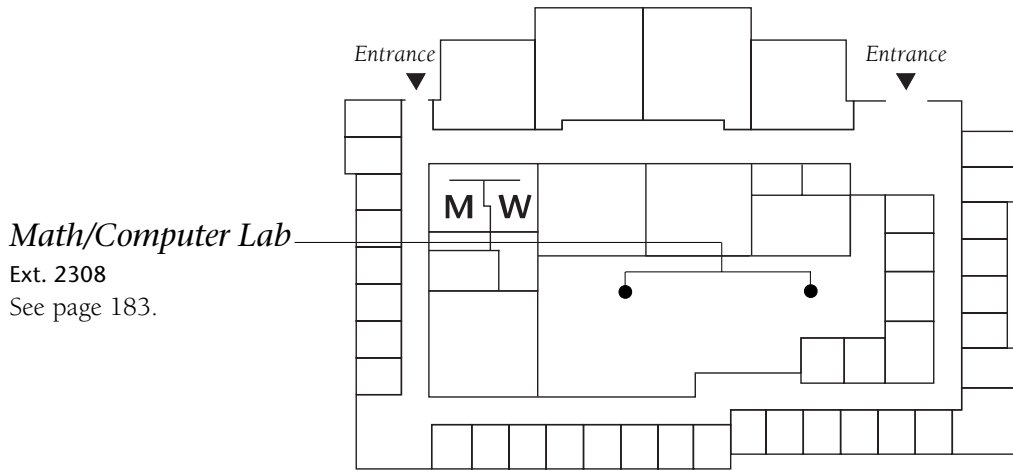
Randall Hall (1st floor)



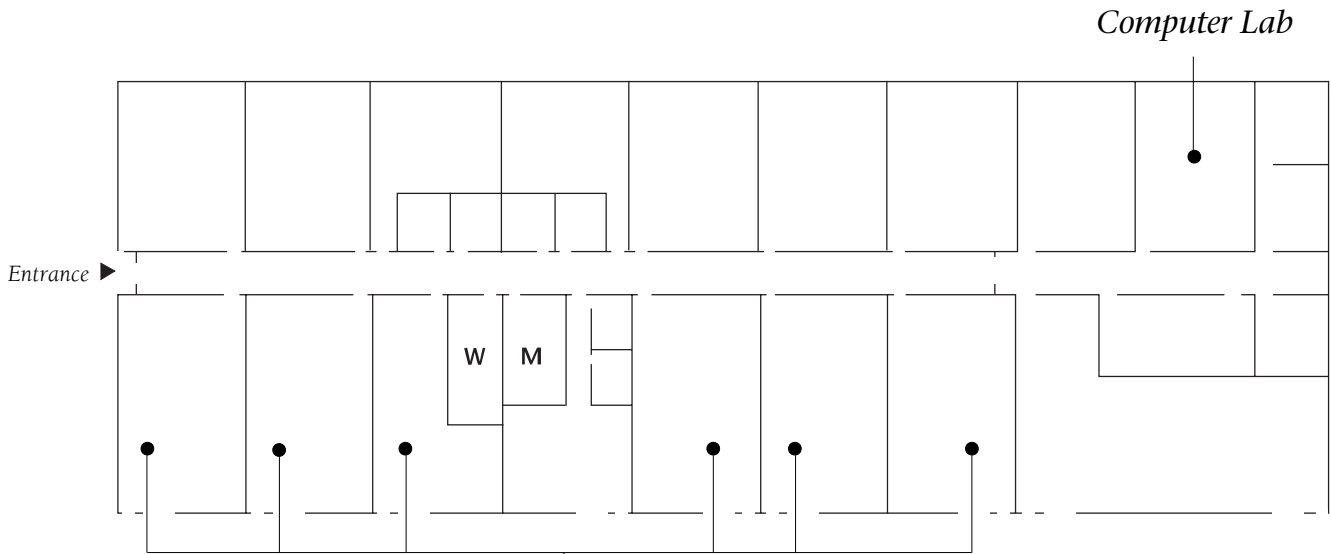
Randall Hall (2nd floor)



Streeter Hall



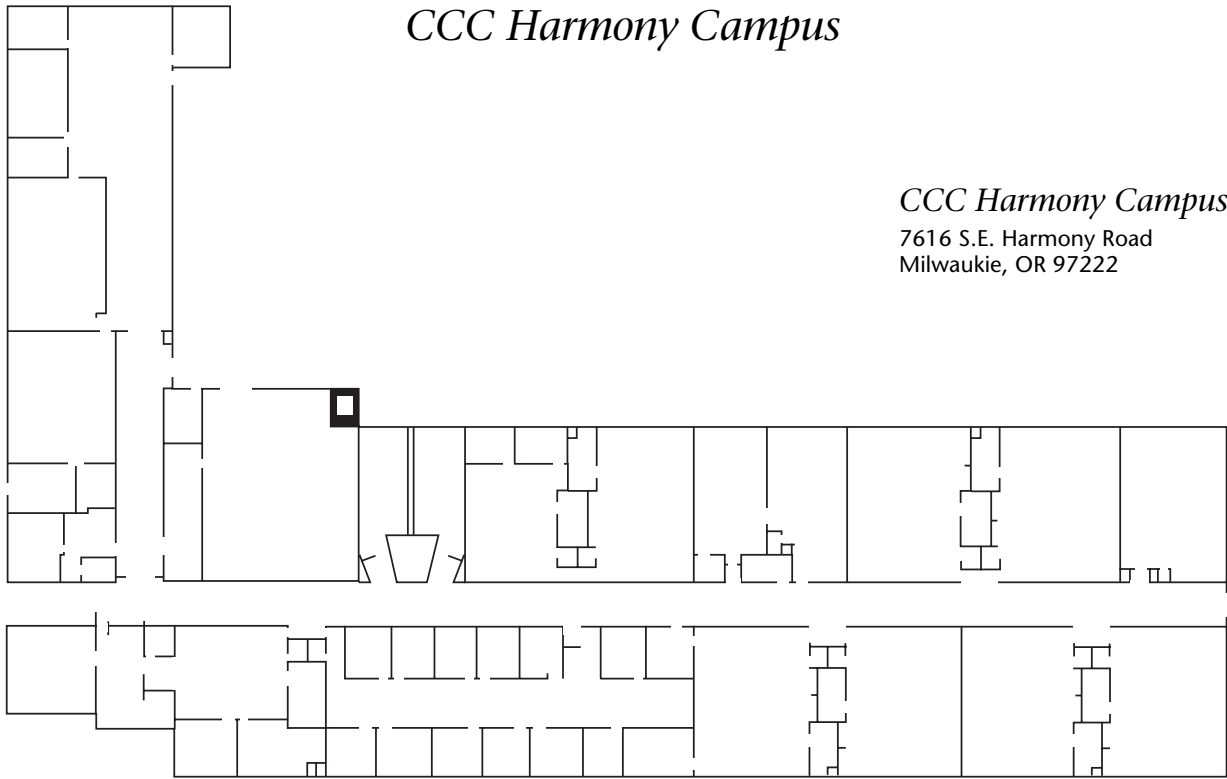
Training Center



CCC Harmony Campus

CCC Harmony Campus

7616 S.E. Harmony Road
Milwaukie, OR 97222



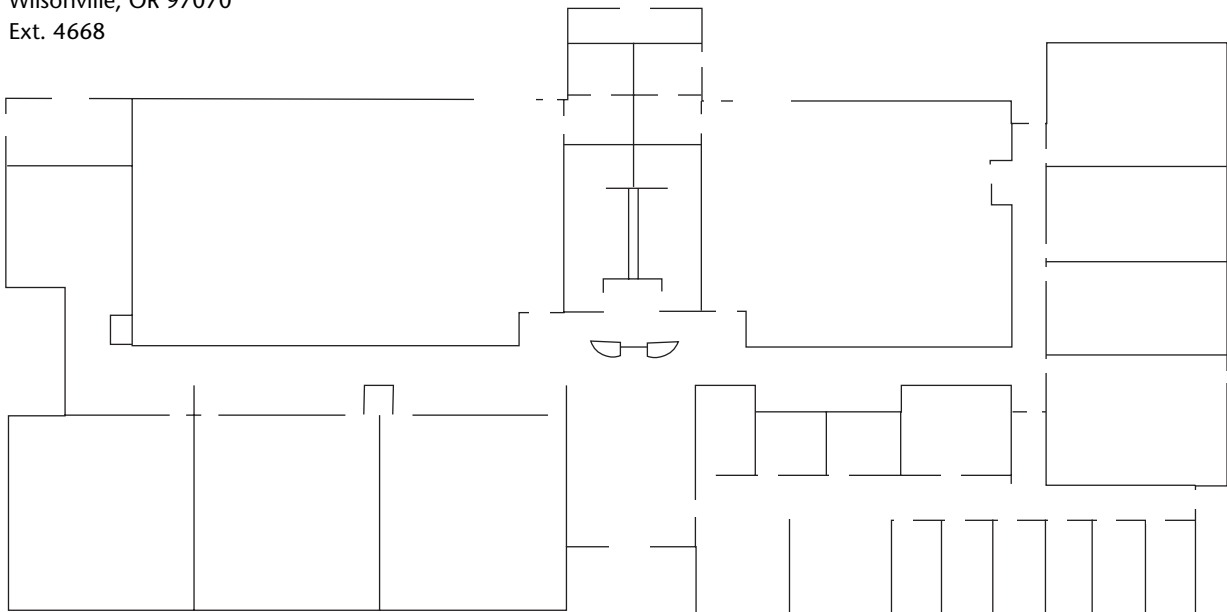
North



CCC Wilsonville Campus

CCC Wilsonville Campus

29353 Town Center Loop E
Wilsonville, OR 97070
Ext. 4668



North



Services & Activities

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Student Services & Activities

Academic Advisors

COMMUNITY CENTER
Ext. 2213

Academic Advisors are available on a walk-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. 2245

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, and cross-country.

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.

Bookstore

MCCLOUGHLIN HALL
Ext. 2248/2421

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, casual clothing, snacks, candies, and cold drinks. The Bookstore offers a special order service for items not normally stocked.

Limited bookstore services are offered at CCC Harmony Campus during the first two weeks of fall, winter, and spring terms.

A textbook buy-back service is provided at the end of each term.

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.

Career Guidance

Advising & Counseling Center

Ext. 2213

One-Stop Career Center

Ext. 2409

The Advising & Counseling Center in partnership with the One-Stop Center offers career exploration and job search support to students and potential students. The Center is staffed by six professional Career counselors and services are available in individual or small group formats. Other resources include:

- materials on the latest careers
- occupational information
- interest inventories
- personality assessments
- job search planning
- employment listings
- interviewing workshops
- resumé writing workshops.

Many of these services are available in an online format. Career Exploration courses are taught 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.

Cashier's

See Student Financial Services page 187.

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 five years. During the summer, care is also available for six- to 10-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.

Child care is also available Monday through Thursday evenings for children of students taking evening classes or CCC evening staff *only*. Care is available for two- to 10-year-olds for a minimum of two hours. Call for cost information.

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 Rally, Racquetball, Baptist Student Ministries, Cat Club, Chrysalis, Computer, Deutschen Veren (German), Fellowship of Christian Athletes, Rainbow, Horticulture, International, Latter Day Saints Student Association (LDSSA), Native American 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 Lab

STREETER HALL
Ext. 2308

Computers in the Streeter Hall Lab are available to any Clackamas student upon presentation of a current CCC student I.D. 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.

Continued

Business Lab

MCLOUGHLIN HALL, M133

Ext. 2510

The Business Lab has computers for students taking business classes that use related software and/or various business machines such as ten key, typewriters, and transcription. Instructor assistants are available days and evenings.

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 or CDT students only. Lab assistants are available.

Music Technology and Audio Recording Labs

RANDALL HALL, R219

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 17 state-of-the-art MIDI work stations. The Audio Recording Lab features both analog and digital recording formats.

Software includes Finale, Digital Performer 3.0, Pro Tools LE, Pro Tools TDM, Vision, Music Shop, Practica Musica, and Band in a Box.

Cooperative Work Experience

COMMUNITY CENTER

Ext. 2273/2232

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.

Cooperative Work Experience is a requirement for all professional/technical programs and is available for credit to qualified students enrolled in any CCC program of study. Since 1977, more than 10,000 students and 1,000 employers have participated in CCC's Co-op program, creating a vital bridge between college studies and workplace success.

Student Benefits

- Improved job skills
- Increased professional confidence
- Clearer sense of career direction
- Valuable employer contacts
- College credit for on-the-job experience
- Work experience suitable for a résumé
- Possible source of income to cover college expenses

Eligibility

Students must:

- Complete nine credits at CCC
- Declare a program of study
- Work in a job related to that program of study

Program instructors or the Co-op Office staff can help locate jobs for students.

Requirements & Registration for Co-op:

- Contact program instructor or the Co-op Office three weeks prior to the beginning of the term;
- Complete the Co-op application form, and determine number of work hours and appropriate credits;
- Register for 1) the appropriate Co-op course for program of study and 2) the weekly classroom or online Co-op seminar;
- Successfully complete 60-180 hours of work experience for 2-6 variable credits (refer to Work/Credit chart below);
- Participate in a weekly Co-op seminar, either in-class or online, on workplace success skills and complete seminar assignments;
- Set and accomplish 3–5 measurable learning objectives designed to improve job performance (with the help of a Co-op instructor and worksite supervisor).

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 (see chart next page). Students may earn a maximum of six co-op credits per term and a maximum of 12 co-op credits per year.

Transfer credit is available in certain programs. Please contact the Co-op Office for more information on transferring your co-op credits to a four-year institution.

Co-op students are graded on the normal grading scale (A, B, C, etc.) based on job performance and accomplishment of measurable learning objectives.

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 + 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 Co-op Office in Community Center, CC147, or call 503-657-6958, ext. 2273/2232.

Other Co-op Opportunities

CWE-010 Pre-Cooperative Work Experience

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.

Student tutors are encouraged to become certified. Certification sets a base standard for the skills, training, and attitudes a tutor needs to be successful.

Eligibility for tutoring is determined by the Coordinator of Tutorial Services, and may require the recommendation of the instructor or the Advising & Counseling Center.

Disabled Student Services

COMMUNITY CENTER

Ext. 2213

Disabled Student Services (DSS) offers a wide range of services to provide students with disabilities access to college programs and activities, and auxiliary support. Services may include: interpreters and communication devices 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. DSS also provides faculty/staff consultations. Students requesting services must:

- Arrange to meet with the DSS counselor.
- Provide DSS 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 DSS prior to receiving services.

- Personally request accommodations through the DSS 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 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 Director of Disabled Student Services and report the event.

High Tech Center for Students with Disabilities

DYE LEARNING CENTER

Ext. 2314

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

COMMUNITY CENTER

Help Center

Ext. 2262

This area provides information and assistance with admissions, registration, transcript requests, enrollment verification, and student I.D. cards.

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.

Continued

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

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.

Forensics

MCLOUGHLIN HALL

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.

Home School Option Program

COMMUNITY CENTER

Ext. 2950

The Home School Option Program enhances the home school experience of high school 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. 2950 for more information.

Instructional Media Services

MODULAR 1A

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

COMMUNITY CENTER, REGISTRAR'S OFFICE

Ext. 2263

The Office of International Student Admissions welcomes students from around the world. Call for an application to the Program for Intensive English (PIE) or to the college as an International Student.

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 books and offers electronic access to the complete text of more than 1200 journals, to newspapers, to hundreds of websites and to collections at other public, college and university libraries. Librarians assist students in the use of the internet and a variety of other electronic and print resources. Electronic reference assistance, inter-library loan, reserve material, periodicals and newspapers are also available. Many databases may be accessed from home through the library's webpage www.clackamas.cc.or.us/library/library.htm

The library is available for use by students, faculty, staff, and the general public. College users are issued college I.D./Library cards at the Help Center or the library. Public users may obtain a library card free of charge at the CCC library circulation desk.

Loans

See Student Financial Services pages 8-9, 187.

Music

RANDALL HALL

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 17 state-of-the-art MIDI work stations. The Audio Recording Lab features both analog and digital recording formats. Software includes Finale, Digital Performer 3.0, Pro Tools LE, Pro Tools TDM, 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 185.

Service Learning Volunteers

COMMUNITY CENTER

Ext. 2600

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

Ext. 2688 (recording)

The college sponsors and hosts special events throughout the school year to promote cultural enrichment on campus. Programming includes films, lectures, literary readings, performing artists, music, art exhibits, noon mini-programs, dances, and craft fairs. For recorded events information, call the "What's Happening" events hotline, ext. 2688. Events information is also available on the college website: www.clackamas.cc.or.us

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 orientation, 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 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

COMMUNITY CENTER

Cashier's Office

Ext. 2253

The Cashier's Office handles all student payments, payment arrangements, accounts receivable billings and collection. Students may cash a personal check for up to \$10.

Financial Aid

Ext. 2422

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, as well as help filling them out. Copies of expense budgets for determining eligibility, sample loan repayment schedules, and requirements for satisfactory academic progress are available. Also see pages 7-10.

Loans

Ext. 2410

The Student Loan office handles Entrance and Exit counseling and collection of Perkins loan accounts at Clackamas Community College.

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 10 for details about educational benefits.

Work Study

Ext. 2554

The Work Study program is part of 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 course work in a degree or certificate program. Applicants should use the Free Application for Federal Student Aid (FAFSA) to apply for financial aid.

Student Publications

BARLOW HALL, B104

Ext. 2310

Student publications include *The Clackamas Print*, the 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 arts. Tuition waivers are available for student editors and the advertising manager of *The Clackamas Print*. For more information and applications, see the Journalism advisor.

Testing/Assessment

MODULAR 2

Ext. 2269

The Testing/Assessment Center offers a variety of testing and assessment services including:

- CLEP (College Level Exam Program)
- Computer Literacy Exam
- Computer Science Placement
- Distance Learning proctored testing
- ESL (English as a Second Language) placement
- GED (General Educational Development)
- Make-up exams (by instructor arrangement)

- Nurse Entrance Test
- Oregon Department of Agriculture Exams
- Oregon State Board of Tax Service Exams
- Placement assessment

Theatre

MCLOUGHLIN HALL

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

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.

Women's Resource Center

FAMILY RESOURCE CENTER

Ext. 2526

Students have access to the collection of books, tapes, and other information related to family needs and development, life and career planning, and health and nutrition. Students can make use of computerized information and referral services related to social and economic assistance, family needs, and crisis intervention. Information is also available about *Connections*—the CCC Chapter of the American Association of Women in Community Colleges.

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 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 e-mail. 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, Dye Learning Center, as well as many public libraries. For more information see: dl.clackamas.cc.or.us 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

Accelerated Degree

MCCLOUGHLIN HALL

Ext. 2214/2157

Highly motivated working adults with a minimum of five years of work experience commit to a six-term program of evening and weekend classes to complete an associate degree in Business Administration or Liberal Studies. Group discussions and projects apply to current work situations. Classes meet one night each week and seven Saturdays per term.

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.

Continued

REQUIREMENTS FOR ADULT HIGH SCHOOL DIPLOMA

Complete a minimum of 22 high school units:

Subject Units

Language Arts	2
Written Composition	1
Math	2
Science	2
US History	1
Global Studies	1
Government	.5
Health Education	1
Physical Education	1
Career Development	.5
Personal Finance & Economics	1
Applied Arts, Fine Arts, or Foreign Language	1
Electives	8
<i>Total:</i>	22

All AHSD candidates must have a ninth grade reading level or better and demonstrate minimum competency in reading, writing and math.

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 HARMONY CAMPUS
7616 S.E. HARMONY ROAD, MILWAUKIE
Ext. 3470

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 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. 3128

The Tri-City Alternative Program (TCAP) is a college program serving 15- to 18-year-olds who want to complete a GED or earn credits toward their high school diploma.

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. The Advising & Counseling Center can answer your questions 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 Skills 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.

College Level Examination Program (CLEP)
Ext. 2269

You may also receive college credit through CLEP tests. Contact the Testing/Assessment Center about taking these exams.

Community Education
CCC HARMONY CAMPUS, H103
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	503-630-8523
Gladstone Community School	503-650-2570
Molalla Community School	503-829-1837
N. Clackamas Community Ed./Milwaukie	503-653-3834
N. Clackamas Community Ed./Sunnyside	503-558-9227
Oregon City Community School	503-657-2521
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 nutrition, women's studies, family studies, early childhood education, gerontology, and parent education.

Bridges

FAMILY RESOURCE CENTER
Ext. 2526

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. 2526

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.

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 credits in an associate degree program 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. Members may request gold seals on their diplomas, and official stamps on their transcripts. 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.

Honors Courses

Ext. 2214

Honors courses provide students with an enriched intellectual experience through active participation in the learning process. Participants have opportunities to pursue topics of special interest and to work closely with instructors who assist them in making the most of their college experience.

Students are admitted to honors courses on the basis of high school or college grades. Students need a 3.25 GPA to qualify or instructor approval. Honors courses are offered in a wide range of disciplines. Current honors courses include writing, speech, history, and religion.

ROTC Program

503-283-7216

Under a cooperative agreement with the University of Portland, Clackamas Community College students may participate in the Air Force Reserve Officers Training Corps (AFROTC) program offered on the University of Portland campus. The purpose of the program, which is administered by the Aerospace Studies faculty at the University of Portland, is to select and train students to serve as officers in the United States Air Force. AFROTC offers to men and women a two-year and a four-year program, both of which lead to an Air Force commission. Students who qualify may elect to pursue either, and credits earned are accepted as transfer credits to meet Clackamas Community College's total credit requirements for graduation. For more information, see the University of Portland catalog or contact the professor of aerospace studies, University of Portland, Portland, Oregon.

Community Services

Art on Campus

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. Displays may be viewed at the Art Center, Barlow Hall, Community Center, Dye Learning Center, Gregory Forum, Family Resource Center, McLoughlin Hall, Oregon Advanced Technology Center, Randall Hall, Streeter Hall, as well as outdoor pedestrian spaces.

CCC Foundation

BARLOW HALL, B240

Ext. 2402

The Clackamas Community College Foundation is a charitable, non-profit corporation dedicated to raising friends and funds for the college. The 26-member Foundation board 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 183.

Community Gardens

CCC CAMPUS

Ext. 2211

Garden space is available to community residents at a nominal charge through the Greenfingers Community Garden project sponsored by the CCC Community Recreation department. Approximately 100 garden spaces are available. The gardens usually open the first weekend of May, weather permitting.

Community Recreation/Facilities

RANDALL HALL

Ext. 2211

The college hosts several annual events including the Halloween 8K Run/Walk, CCC Takedown Wrestling Tournament, winter adult basketball league, Polar Bear 5K Run/Walk, youth baseball and softball camps, spring and summer tennis tournaments, and a summer slow pitch softball league. Call the Community Recreation office to be placed on the events mailing list.

Outdoor facilities at CCC include a jogging/walking trail, six tennis courts, a track, softball/baseball fields, and soccer fields. All 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 Community Recreation office for specific facility use arrangements, hours, and reservation rates.

Connections: Women Creating Community

American Association of Women in Community Colleges, Local Chapter

FAMILY RESOURCE CENTER

Ext. 2456

The mission of the AAWCC local chapter—*Connections*—is to provide opportunities for women to come together for activities and events that celebrate their common experiences. These programs provide a safe, supportive environment and encourage women to grow emotionally, mentally, and physically.

Ongoing activities include a women writers' group, workshops, and Lunch and Learn events each quarter. In addition, the *Connections* program offers credit classes and cultural and outdoor events. Activities are open to all students and staff at Clackamas, as well as the community.

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. 2351

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 pre-school through sixth grade, as well as adult and youth community education covering a variety of environmental topics.

We offer professional and technical training for K-12 teachers and administrators, and an Urban Watershed Institute with workshops for a professional audience.

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, daycare 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)

The Haggart Astronomical Observatory is the largest public telescope in western Oregon. Astronomy courses are offered through the Physical Science department. Public viewing for groups and individuals is also offered by trained volunteer amateur astronomers.

Urban Watershed Institute

Ext. 5104

The Urban Watershed Institute is a program of the Environmental Learning Center that provides professional development courses, workshops, and conferences that emphasize a multi-disciplinary approach to urban watershed management. Topics include the regulatory environment, emerging philosophies and practices in: stormwater management, erosion prevention, sediment control, stream restoration, habitat protection, watershed policy development, and principles of wetlands and stream ecology. On-going open enrollment and customized short courses (4-16 hours) take place in the classroom and field.

One-Stop Career Center

COMMUNITY CENTER*

Ext. 2409

Clackamas Community College has been certified as a One-Stop Center, so we can now assist you in connecting with county services, workshops, and specialized training for immediate employment. The Center offers:

- Job search and placement assistance, including resumé and interviewing assistance
- Initial assessment and career counseling
- Information and referral to supportive services including child care and transportation
- Eligibility determination for WIA training funds
- Assistance on establishing eligibility for Welfare-To-Work, financial aid and filing unemployment insurance claims
- Employment statistics
- Follow-up services for 12 months after placement when appropriate

* One-Stop services are also offered through the Family Resource Center on the Oregon City campus and the Targeted Learning Center on the Harmony Campus.

Pauling Center Gallery

LINUS PAULING SCIENCE CENTER

Ext. 2386

The Pauling Center Gallery features continuously changing art exhibits. The gallery displays the work of local and regional artists, students, and faculty. Opening receptions and lecture presentations are open to the public and provide an opportunity to meet the artists. A workshop is offered in conjunction with at least one gallery exhibit each year. Interested professional artists may contact the Art Department for a schedule of shows.

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.

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*

Public Safety Training Center

12700 SE 82ND AVENUE, CLACKAMAS
503-650-6677

The Public Safety Training Center provides public classes in responsible firearms use through training.

The PSTC uses state-of-the-art filtration and electronic target systems that exceed state and federal mandates regarding environmental safety standards. All ammunition used on the PSTC ranges is sold through the armory and will be “clean-fire” in available calibers.

Features:

- Instruction to the public for safety education and training. Contact the PSTC for the most up-to-date class schedule.
- State-of-the-art 20-spot indoor shooting range
- Certified firearms training and qualification
- Concealed carry handgun license certification
- Certified one-on-one private instruction

Small Business Development Center

CCC HARMONY CAMPUS
7736 S.E. HARMONY ROAD, MILWAUKIE
503-656-4447

Clackamas Community College, in partnership with the Small Business Administration and the Oregon Department of Economic Development, offers services to small business owners and managers.

Contact the SBDC for:

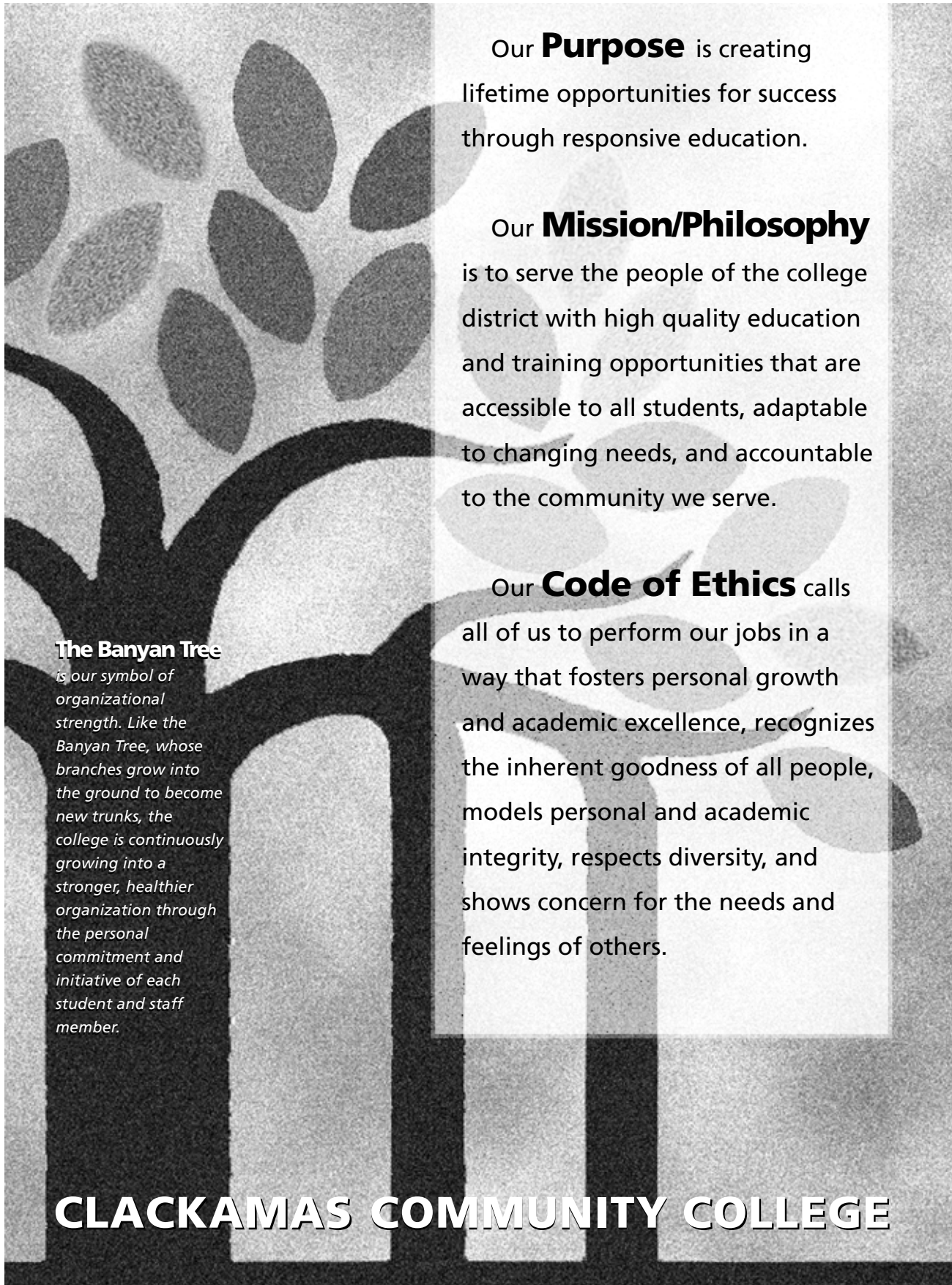
GREENHOUSE: an accelerated 20-week course of classes and individual counseling targeted to business start-ups.

SMALL BUSINESS MANAGEMENT I, II & III: year-round programs which strengthen the management skills of owners of established small businesses through classes and individual counseling.

SBDC also offers:

- Workshops and seminars for current and prospective small business owners and managers.
- Free individual counseling with professional staff and expert volunteers for the current or prospective small business owner.
- Financial advising and loan packaging for new and expanding small to mid-sized businesses.
- Resource center with computers, reference books, periodicals and business-oriented videos to assist with market research and feasibility studies.
- Online links to business resource listings and access to small business seminars at www.ccsbdc.org.
- Courses in wordprocessing, system management, desktop publishing, internet, web page design, and a variety of other offerings.

Mission/CCC at a Glance



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 Planning & Employment 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.

OUTCOMES:**STUDENT DIVERSITY**

- Average age, full-time students: 25 years
- Average age, all students: 33 years
- Females: 47%
- Males: 48.7%
- Racial/ethnic minorities in CCC district: 8.6%
- Racial/ethnic minorities in student body: 10.8%

GRADUATES

- Degrees/certificates awarded 609
- Associate of Arts Oregon Transfer 28.1%
- Associate of Science/Technical Certificate 29.9%
- Adult High School Diploma 10.1%
- GED 31.9%
- Graduation Rate 1998 (Cohort) 12.9%
- Transfer Rate 1998 (Cohort) 24.8%
- Professional/Technical graduates employed after graduation (98-99) 85.1%

BUSINESS & INDUSTRY

- Businesses served by Small Business Development Center: 414
- Employees trained by Customized Training & Development Services: 4,798

FINANCIAL AID

- CCC students receiving financial aid: 1,750
- Average amount of aid per student: \$2,913
- Total amount of aid received: \$5,098,087

COMPARATIVE TUITION COSTS

Average annual tuition cost for a full-time student:

- Oregon private colleges & universities: \$16,160
- Oregon state colleges & universities: \$3,561
- Clackamas Community College: \$1,554

CCC at a Glance

Numbers reflect 2000-01 data unless otherwise noted.

SERVICE AREA

CCC District: All of Clackamas County except Lake Oswego, Sandy, Damascus, and Boring school districts.

District Population: estimated 277,305

ENROLLMENT

2000-01 Headcount: 27,406

2000-01 Full-time Equivalence: 7,026

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.

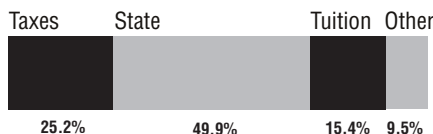
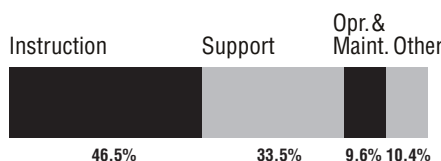
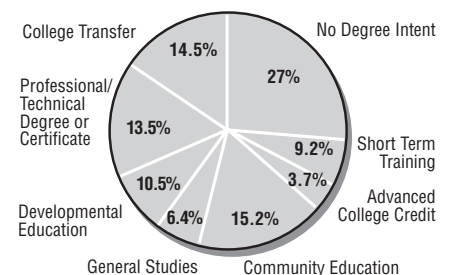
Literacy/Basic Skills: CCC offers individualized instruction in basic academic and study skills, including Adult High School Diploma, GED, ESL, Alternative Schools, Life & Career Options, and Young Parent Opportunity Program.

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 Small Business Development Center.

For more information on these and other college statistics, contact the Research Office at 503-657-6958, ext. 2317.

CCC President
Earl "Joe" P. Johnson
Board of Education
Mimi Chitty
Estle Harlan
Jean Lowry
Roger Rook
Ross Smith
Larry Sowa
Larry Wright

GENERAL FUND RESOURCES 2001-02**GENERAL FUND EXPENDITURES****ENROLLMENT BREAKDOWN BY STUDENT INTENT**

Faculty & Administration

**CLACKAMAS COMMUNITY
COLLEGE
BOARD OF EDUCATION**

	Term ends
Larry Wright	2005
Jean Lowry	2005
Ross Smith	2005
Roger Rook	2005
Chuck Clemans	2003
Estle Harlan	2003
Mimi Chitty	2003

**CLACKAMAS COMMUNITY
COLLEGE PRESIDENT**

Dr. Earl P. "Joe" Johnson

FACULTY & ADMINISTRATION

- 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
- Andersen, Judith (1983)**
Nursing
B.S.N. Augustana College
M.S.N. University of Colorado
- 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
- Andrews, Cynthia R. (1979)**
Director/Instructional Support Services
B.A. Southern Oregon State College
M.A. Southern Oregon State College
- 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
- Austen, Wayne (1987)**
Auto Body
A.S. Portland Community College
State of Oregon Vocational Certification
- Averill, Diane L. (1991)**
English
B.A. University of Oregon
M.F.A. University of Oregon
- 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. Cuny-Brooklyn College
M.S. University of Oregon
- Bender, Hal (1969)**
Chemistry/Physical Science
B.S. Purdue University
M.A. Stanford University
M.S. San Francisco State University
- 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
- Bradley, David A. (1999)**
Automotive Programs
- Brennan, Kelly J. (1996)**
Forensics, Speech/Social Science
M.A. Washington State University
B.S. Portland State University
A.A./A.S. Clackamas Community College
- Briare, William V. (1996)**
Religion/Social Science
M.A. Mt. Angel Seminary
B.S. University of Nevada
- 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
- 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
- Carroll, Karen E. (1991)**
Small Business Development Center
B.A. Oregon State University
M.S. Oregon State University
M.B.A. Virginia Polytechnic Institute and State University
- Cate, Caroline L. (1990)**
English as a Second Language
B.A. Portland State University
M.Ed. Oregon State University
- Chase, Eileen S. (2000)**
Nursing
B.S.N. University of Illinois at Chicago
M.S.N. University of Utah
- 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
- Conklin, Raymond (1975)**
Automotive Technology
B.S. Ferris State University
- Connett, Dian (1980)**
Dean of Instructional Services
B.S. Ohio State University
M.S. Ohio State University
Ed.D. Portland State University
- Cook, Gerald R. (1984)**
Automotive Technology
A.S. Portland Community College
A.S. Portland Community College
State of Oregon Vocational Certificate
- Coombes, George A. (1988)**
Director/Information Technology Services
B.S. Northern Michigan University

- Craven, Mary N. (1987)**
Skills Development
B.S. East Central State College
M.S. Portland State University
- Cross, Douglas B. (2001)**
Computer Science
B.S. University of Oregon
M.S. University of Oregon
- 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
- Derkacht, Barbara (2001)**
Occupational Skills/VRD and Cooperative Work Experience
B.A. University of Washington
M.Ed. University of Washington
- 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 K. (1980)**
Assistant to the President/College Advancement
B.A. Stanford University
M.S. University of Oregon
- Dodson, Carol D. (2001)**
Nursing
B.S. Sonoma State University
M.S. Oregon Health Sciences University
- Drebin, Diane (1998)**
Registrar
A.A. Clackamas Community College
A.S. Clackamas Community College
B.A. Marylhurst 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
- Erdman, Al (2001)**
Dean of College Services
B.A. Drury College
M.B.A. University of Missouri
- 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
- Faucher, Eric (1992)**
Youth Services
B.A. California State
M.A. Humbolt State University
- Ferris, Glenn R. (1978)**
Associate Dean/Industrial Programs
B.A. Oregon State University
Ed.M. Oregon State University
- Fiskum, Paul K. (1976)**
Physical Education
B.S. Oregon College of Education
M.S. Portland State University
- Fithian, Lisa (1995)**
Nursing
M.S. John Carroll University
N.D. Case Western Reserve University
M.S. University of California, San Francisco
- Flippo, Ida (1997)**
Criminal Justice
B.S. Southern Oregon State College
M.A.T. Willamette University
- 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
- Frank, William W. (1998)**
Customized Training & Development
B.A. University of California
M.S. Eastern Washington University
- Giltz, R. Scott (1996)**
Manufacturing Technology
State of Oregon Vocational Certification
- Godfrey, Jan A. (1992)**
Associate 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
- Graybill, 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
- 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
- Harlow, Franklin I. (1977)**
Speech
B.S. Southern Oregon State College
M.A. University of Northern Colorado

- Hartsock, Donald G. (1988)**
Social Science
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
- Hayden, Alice (1980)**
Mathematics
B.A. Macalester College
M.S.T. Portland State University
- Hearing, Sylvia J. (1998)**
Customized Training & Development
B.A. Portland State University
M.B.A. City University
- Helbig, Ronald E. (1992)**
A.S. Clackamas Community College
Building Construction
State of Oregon Vocational Certificate
- Herman, Brenda (1987)**
Mathematics/Computer Science
B.A. Lenoir Rhyne College, North Carolina
M.A. University of North Carolina
- Hobart, Roxie E. (1975)**
Associate Dean/Controller
B.S. Oregon State University
M.B.A. University of Portland
- Holcomb, David K. (2000)**
Director of the Bookstore
- Hollatz-Wisely, Cheryl (1998)**
Director of Student Leadership
& Outreach
B.A. Wheaton College, Illinois
M.Ed. University of Missouri
- Hopkirk, Susan (1976)**
Mathematics
B.A. University of Iowa
M.A. University of Arkansas
- Howley, Elizabeth A.M. (1983)**
Horticulture
A.S. Stockbridge School of Agriculture
B.S. University of Massachusetts
- Humphreys, Helen (1985)**
Skills Development
B.S. Lewis and Clark College
M.A.T. Lewis and Clark College
- Hutchison, Donald (1984)**
Mathematics
B.S. Portland State University
M.S.T. Portland State University
- Jackson, Jr., James E. (1991)**
Director/Health/Physical Education/
Athletics/Community Recreation
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.A. University of Oregon
- Jefferis, Alan (1980)**
Drafting Technology
A.A. Southwestern Junior College
A.B. San Diego 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
- Keeler, Robert (1997)**
Anthropology
B.A. University of North Carolina
M.A. Idaho State University
Ph.D. University of Oregon
- Kegg, Jack K. (1998)**
Health/Physical Education
A.A. Clackamas Community College
B.S. Western Oregon University
- Ketchum, Ken R. (2000)**
Automotive Technology
A.G. Portland Community College
A.A.S. Portland Community College
Vocational Education Teaching Degree,
Portland 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)**
Manufacturing Technology
A.A. Clackamas Community College
A.A.S. Portland Community College
B.A. Marylhurst University
- LeCavalier, John (1996)**
Director/Environmental Learning Center
B.S. Utah State University
M.A. Lewis and Clark College
- Levi, Larry (1985)**
Director/Apprenticeship
A.S. Clackamas Community College
- Lewandowski, Kurt L. (1990)**
Mathematics
B.S. Southern Utah State College
M.S. Oregon 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)**
Oregon Advanced Technology Center
A.S. Clackamas Community College
- Logemann, Wayne (1977)**
Coordinator/Community Recreation
B.S. University of Oregon
- Lundy, Daniel W. (1975)**
Water Quality Technology
B.S. Oregon State University
M.S. Oregon State University
- 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. (1995)**
Skills Development
B.S. Oregon State University
M.S. University of North Texas
- 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
- 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)**
Cooperative Work Experience
B.S. School of the Ozarks
M.A.T. Lewis & Clark College
- Middendorff, Carol A. (1983)**
Business
A.A. Southwestern Oregon Community College
B.A. Oregon State University
M.S.T. Portland State University
- Mikleton, Nancy (1976)**
Physical Education
B.S. Illinois State University
M.S. University of Oregon
- Miller, David W. (1998)**
International Education
B.A. University of Montana
B.A. Portland State University
M.A. Portland State University
- Mills, David J. (2001)**
Music
A.A. Mt. Hood Community College
B.S. Westminster College
M.M.E. Lewis & Clark College
- Misley, Robert R. (1986)**
Biology
A.A. Clackamas Community College
B.S. Eastern Oregon State College
M.A.T. Lewis & Clark College
- Mitchell, Maureen G. (2002)**
Medical Assistant/Nursing
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
- Molatore, Jeffrey Lee (1977)**
Oregon Advanced Technology Center
A.S. Oregon Institute of Technology
B.S. University of Oregon
- 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
- Munson, Doris (1995)**
Library
B.S. Oregon State University
M.L.S. University of Washington
- Nedelcu, Sanda (2000)**
Manufacturing
B.S. University of Craiova, Romania
M.S. University of Craiova, Romania
- 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
- Neufeld, James (1995)**
Parts Merchandising
A.A.S. Portland Community College
- 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
- Patterson, Carol A. (1975)**
Associate Dean/Campus Services
- Patrick, Tanya (1994)**
Business
B.A. California State University
M.S.T. Portland State University
- Peabody, Judith E. (1972)**
English
B.A. Tulane University
M.A. University of Maryland
Ed.D. Brigham Young University
- Pearson, Kirk (1986)**
Director/Bond Project
- Rawls, Rodger R. (1998)**
Drafting Technology
- Reilly, Nicole L. (2002)**
Nursing
B.S.N. Clemson University
M.N. University of Washington
- Rickenbaugh, Jane (1967)**
Communications
A.A. Palomar College
B.S. Brigham Young University
M.S. Southern Illinois University
M.A.L.S. Reed College
- Robinson, Robin A. (1989)**
Physical Education
B.S. Willamette University
M.A.T. Lewis and Clark College
- Rothi, Paul A. (1992)**
Associate Dean/Chief Information Officer
B.S. Pacific Lutheran University
M.S. Pacific Lutheran University
- 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

Schmidt, Mark (1974)

Manufacturing Technology
 A.S. Oregon Technical Institute
 B.S. Oregon State University
 M.Ed. Oregon State University

Schneider, Karen T. (2001)

Nursing
 Nursing Diploma, St. Vincent School of
 Nursing
 B.S.N. Oregon Health Sciences
 University

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

Shea, Tim (1998)

Small Business Development Center
 A.A. Santa Barbara City College
 B.S. Portland State University
 M.B.A. Portland State University

Shumaker, Terence M. (1978)

Drafting Technology
 A.A. Portland Community College
 A.A. Foothill College
 B.A. San Jose State University

Slusarenko, E. Kay (1998)

Associate Dean/Art, Humanities,
 Social Science
 B.S. University of Idaho
 M.F.A. Portland State University

Smith-English, David (1995)

Theatre
 B.A. Lewis & Clark College
 M.A.T. Lewis & Clark College

Snively, John (1975)

Physical Science
 B.S. Portland State University
 M.S. Portland State University

Sprehe, Tara L. (2001)

Student Outreach and Service Learning
 B.S. University of Oregon
 M.S. Miami University

Stiles, Bradley J. (1998)

English
 B.A. Wichita State University
 M.A. University of Illinois
 Ph.D. University of Illinois

Stone, Karen A. (1983)

Director/Customized Training
 & Development Services
 B.A. Stanford University
 M.S. Marylhurst

Stones, Richard (1994)

International Education
 B.A. Portland State University
 M.A. Portland State University
 Ph.D. Brigham Young University

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

Symes, William J. (1980)

Business
 B.S. University of Southern California

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

Topping, Robert P. (1993)

Building Construction
 A.A. Portland Community College
 B.S. Portland State University

True, J. Rick (1995)

Art
 B.A. University of New Mexico
 M.F.A. Portland State University

Tuffli, Theresa A. (1982)

Accelerated Degree Program
 A.S. Clackamas Community College
 B.A. George Fox College
 M.B.A. George Fox College

Turner, Eileen M. (1991)

Nursing
 A.A. Graceland College, Iowa
 B.S.N. University of Colorado
 M.S.N. Catholic University of America

van der Bijl, Baldwin (1978)

Associate 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

Wanner, Paul J. (1992)

Manufacturing
 Oregon Advanced Technology Center
 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

Watkins, Michael W. (1974)

Skills Development
 B.S. Oregon College of Education
 M.S. Oregon College of Education

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

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

Zingarelli, René (1981)

Associate Dean/Extended Learning
 Services
 A.A. Portland Community College
 B.S. Portland State University
 M.A.T. Lewis & Clark

Zuelke, William (1997)

Counseling
 B.A. Gonzaga University
 M.Div. Weston School,
 Cambridge, MA
 M.S. Loyola College

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